Graduate education is not simply an extension of undergraduate education; it means advanced, intensive, and purposeful study.
The graduate experience demands that students inquire searchingly and apply themselves fully in their scholastic activities. This experience should be of such duration that there is time for reflection, absorption, and the emergence of intellectual independence and self-confidence.

George Mason University Programs of Study

Graduate and Professional Degrees

Existing, or planned for 1985-86. (See Reference Section for further information)

Accounting M.S.
Applied Physics M.S.
Biology M.S.
Business Administration M.B.A.
Computer and Electronics Engineering M.S.
Computer Science M.S.
Conflict Management M.S.
Counseling M.Ed.
Creative Writing M.F.A.
Economics M.A., Ph.D.
Education D.A.Ed.
Education Administration and Supervision M.Ed.
Elementary Education M.Ed.
English M.A.
Environmental Biology and Public Policy Ph.D.
Foreign Languages M.A.
Geographic and Cartographic Sciences M.S.
History M.A.
Information Systems M.S.
Information Technology Ph.D.
Interdisciplinary Study M.A.I.S.
Law, J.D.
Mathematics M.S.
Music M.A.
Nursing M.S.N.
Operations Research and Management Science M.S.
Physical Education M.S.
Psychology M.A., Psy.D.
Public Administration M.P.A., D.P.A.
Reading M.Ed.
Secondary Education M.Ed.
Sociology M.A.
Special Education M.Ed.
Systems Engineering M.S.

Certificate Programs

Gerontology
International Nursing
Nursing Administration at the Middle Management Level
Nursing Education
Teaching of English as a Second Language
Graduate study at George Mason University involves a commitment to understanding and activity in meeting requirements and standards of study in courses and graduate degree programs that regularly exceed those at the undergraduate level.

With the graduate faculty members determining the standards for learning, graduate students are asked to join them in seeking excellence in advanced study.
George Mason University is the major comprehensive university in Northern Virginia, and is located near the nation's capital. With an enrollment exceeding 15,000 students, George Mason University offers 90 undergraduate, professional, and graduate degrees, including 6 at the doctoral level. Graduate enrollment in Fall 1984 was about 3,400. Student enrollment has quadrupled since 1972, and is expected to exceed 16,000 in the 1980s.

The University has seven units headed by deans: Arts and Sciences; Professional Studies; Graduate School; Continuing Education; Business Administration; School of Law; and Summer Session. George Mason offers a distinctive curriculum with professional, graduate, and undergraduate degree programs at two Northern Virginia campus locations: the suburban Main Campus of 583 wooded acres in Fairfax, and the Metro Campus in Arlington, which houses the School of Law. In addition, courses are taught at more than 25 off-campus sites in Northern Virginia. A large majority of George Mason's students commute to the campuses from the suburban and metropolitan areas of Northern Virginia, Maryland, and Washington, D.C., but the University is not designed academically or physically like a typical commuter school.

The development of the University has been shaped in response to the educational needs of an extraordinary cosmopolitan constituency. It includes many government leaders and career civil servants, foreign and international agency personnel, and a burgeoning industrial, publishing, and consulting community. The University takes pride in Virginia's rich historical past and in the linkage to the changing modern world offered by its location, just 45 minutes from the District of Columbia. George Mason is developing innovative, public-service-oriented programs that distinguish it from older universities.

George Mason's development is not restricted to academic programs. A 10,000-seat sports arena is under construction and will open in 1985.
Construction of a humanities center is scheduled to start soon. A new sports complex recently opened, consisting of a field house with an indoor track, an outdoor track, tennis courts, and baseball and soccer fields.

Through the years, the University's mission and goals have fostered in all degree programs a substantial core from the liberal arts and sciences, while actively encouraging innovation and responsiveness to community needs. The University today stands as an example of well-designed and well-directed higher education.
Mission

"George Mason University will provide superior, traditional education enabling students to develop critical and analytical modes of thought and to make rigorous, honorable decisions," said the 1980 Board of Visitor's mission statement. "The University seeks to prepare students to interpret the complex questions facing them and society. It further seeks to meet the needs of students by providing the opportunity for innovative educational methods and programs; and it will enhance these programs with undergraduate, graduate, and professional courses of study that are cross-disciplinary.

"The University will strive to be a resource of the Commonwealth serving government and private enterprise, and to be the intellectual and cultural focus of Northern Virginia."

History

The University was named for George Mason of Gunston Hall in Fairfax County. During the American Revolution, this Northern Virginian drafted the Virginia Declaration of Rights and later convinced his countrymen to adopt a Bill of Rights to the United States Constitution. Written guarantees spelling out the rights of free citizens are George Mason's greatest legacy.

What is now George Mason University was first established in 1957 as an extension center of the University of Virginia. Two years later, the City of Fairfax donated 147 acres to the school, which was named George Mason College, a branch of UVA. In 1964, the new campus welcomed 365 students to the four original buildings on the Fairfax site. In 1966, the Virginia General Assembly authorized the College to become a four-year, degree-granting institution and gave it a long-range mandate to expand into a regional university of major proportions. The General Assembly later enacted legislation separating George Mason from UVA, and on April 7, 1972, the Governor signed into law the historic legislation making George Mason an independent institution with University status.
The Graduate School

Graduate Study was initiated at George Mason in 1970 with the goal of providing opportunities for students to participate in intensive and individualized programs of study under the direction of a strong faculty. To promote this goal, the Graduate School encourages research, inquiry, and scholarship at the highest levels from both students and faculty.

The Graduate School offers 32 master’s programs, 6 doctoral programs, and 6 certificate programs. Nearly all graduate courses are offered in the late afternoon and early evening hours. In Fall 1984, approximately 2,100 admitted graduate students were enrolled at George Mason, and more than 1,300 postbaccalaureate students were taking courses through Extended Studies Enrollment.

Organization

The Graduate Faculty, operating under bylaws adopted in 1975, is the body in which the governance of all academic policies and procedures of the Graduate School is vested. The Graduate Faculty approves all new graduate programs; authorizes all graduate course work, policies, and degrees conferred by the University; and sets standards for admission to and graduation from graduate programs.

The Graduate Council is the executive and policymaking body of the Graduate Faculty. It consists of one graduate faculty member elected from each department offering graduate work, three at-large members elected from the Graduate Faculty, and the Graduate School Dean. It meets approximately once a month to conduct business for the Graduate Faculty.

The Graduate Council has four standing committees: the Academic Policies and Procedures Committee, the Curricula Committee, the Graduate Student Affairs Committee, and the Interdepartmental Graduate Degree Committee.

Administration

Averett S. Tombes, Dean
Anthony Andrew Hickey, Assistant Dean

Graduate Council Members 1984–85

Barry K. Beyer, Ex Officio
William J. Bolce
Brack Brown
Catherine A. Connelly
W. Mark Crain
Sam A. di Bonaventura
Esther N. Elstun
James W. Fonseca
Theodore Gessner
Joseph B. Gittler
Henry Hamburger
Mary S. Hammond
Anthony Andrew Hickey, Ex Officio
Judith Hill
Ronald J. Jensen
Kyang Y. Jo
Robert D. Johnston
Deborah Kaplan
Walter Kruppa
Teck-Cheong Lim
Bruce B. Manchester
James A. Metcalf
Marie Dvorzeck
Theodore Remley
Larry Rockwood
Ronald J. Roth
Moira Shannon
Raleigh Steinhauser
Averett S. Tombes, Dean

Purpose of Graduate Study

Graduate education is not simply an extension of undergraduate education. Graduate education means advanced, intensive, and purposeful study. Accordingly, in order for graduate education to be valid and creditable, the graduate experience should demand that students inquire searchingly and apply themselves fully in their scholarly activities.

Graduate course work should be at a level that directly reflects and builds upon the knowledge and intellectual maturity a student acquires during the undergraduate years. The graduate experience should be of such duration that there is time for reflection, absorption, and the emergence of intellectual independence and scholarly self-confidence.

Students should be in close and frequent contact with experienced scholar-teachers, and teaching resources and educational environments should be sufficient to promote advanced learning and meet graduate-level educational objectives. Provisions should exist within the Graduate School for regular evaluation of student performance to an extent that both students and their graduate teachers can be secure in the worth of their intellectual accomplishments.

Graduate study at the University involves a commitment to understanding and activity unlike that ordinarily called for in undergraduate degree programs. Graduate students, both full- and part-time, are expected to meet requirements and standards of study in courses and graduate degree programs that regularly exceed those expected in...
undergraduate courses or programs. With the graduate faculty members determining standards for learning, graduate students are asked to join them in seeking excellence in advanced study.

**Graduate Programs**

A detailed discussion of specific graduate degree programs can be found in the departmental sections of the catalog. The graduate departments appear in alphabetical order. Graduate School requirements applicable to all degrees are given later in this section, while program specific requirements can be found in the departmental sections.

A number of departments without graduate degree programs offer graduate-level courses for elective credit and for personal or professional enrichment.

**Graduate Courses**

Graduate course descriptions in this catalog appear with their respective programs. Graduate courses are numbered 500 and above. Courses numbered 500 to 799 are primarily master's-level courses and those numbered 800 to 999 are primarily doctoral-level courses. The graduate course numbering system is discussed in detail at the back of the catalog. Note: graduate courses have been renumbered in all departments in either 1980-81 or 1981-82.
The Catalog

Detailed in this catalog are the programs and degrees offered by the Graduate School. All information, including statements of tuition and fees and admission and graduate requirements, is subject to change without notice.

For further information regarding any of the programs listed in this catalog or for applications, please write or call the Admissions Office, 117 Finley Building, George Mason University, 4400 University Drive, Fairfax, VA 22030, phone (703) 323-2100.

http://catalog.gmu.edu
Contents

Academic Calendar 1985-1986
Fall Semester.
Spring Semester.
Summer Session.
Programs of Study.

Profile of George Mason University
Mission, 9
History, 9
The Graduate School, 11

Graduate Policies and Procedures
Admission Policies, 20
Procedures, 24

University Facilities and Resources
Education Centers, 38
University Offices and Information, 41

Student Affairs
Student Services, 45
Student Regulations, 49
Financial Information, 50
Financial Assistance, 53

Degree Programs
Accounting, 58
Biology, 60
Business Administration, 66
Computer and Electronics Engineering, 73
Computer and Information Sciences, 77
Conflict Management, 82
Economics, 85
Education, 90
English, 113
Foreign Languages and Literatures, 120
Geographic and Cartographic Sciences, 123
Health Education, 125

History, 127
Information Technology, 132
Interdisciplinary Studies, 135
Mathematics, 138
Music, 140
Nursing, 143
Physical Education, 147
Physics, 149
Psychology, 151
Public Administration, 158
Sociology, 166
Systems Engineering, 169

Certificates, Programs, and Additional Graduate Courses
Northern Virginia Cooperative Graduate Engineering Program, 178
Other Graduate Courses, 179

Reference
Glossary of Course Symbols, 186
Honor Code, 188
Regulations, 191
Notices, 192
State Domicile Legislation, 194
School of Law, 197
Visiting the Campuses, 197
Campus Map Legend, 198
Campus Map, 200
Index, 202
Directory, 206
Academic Calendar 1985–1986

Fall Semester 1985

Monday, April 1. Last day for filing Graduate School Fellowship Applications for doctoral students.

Monday, April 1. Last day for filing Ph.D. Economics and Ph.D. Biology admissions applications for Fall 1985.

Saturday, April 27. Graduate Record Examinations (GRE).

Wednesday, May 1. Last day for filing master’s and Ph.D. Information Technology admissions applications for Fall 1985.

Wednesday, May 1. Last day for filing Graduate School Fellowship Applications for master’s students.

Saturday, June 16. Graduate Management Admission Test (GMAT).

Thursday, July 4. Independence Day; University closed.

Monday, July 8. Start counseling and registration for Fall Extended Studies enrollees.

Monday, July 15. Last day for mail-in/hand-in registration for Fall. Registration in person continues by priority groups.

Thursday, July 18. Last day for taking Nursing proficiency exams for academic year 1984–85.

Friday, July 26. Summer master’s theses and doctoral dissertations due in Office of the Graduate Dean.

Friday, August 9. Tuition and fees due for early-registered students (Payment with late fee will be accepted until August 16).

Monday, August 19. Fall registrations canceled for early registered students who have not made arrangements for payment with Cashier (Students who cancel and do not re-register for Fall classes are assessed a $20 administrative fee.)

Wednesday, August 21 through Thursday, August 29. Registration and adjustment. (For times and priorities see Schedule of Classes.)

Thursday, August 29. Extra schedule adjustment day.

Monday, September 2. Labor Day; University closed.

Tuesday, September 3. First day of classes.

Tuesday, September 10. Last day for adding new courses (except those meeting only once a week).

Tuesday, September 10. Last day for a full tuition refund (less $20 fee).

Tuesday, September 10. Last day for adding those new courses which meet only once a week.

Wednesday, September 11. Second deferred tuition payment due.

Tuesday, September 17. Last day for a partial tuition refund—second week.

Tuesday, September 24. Last day for partial tuition refund—third and final week.

Tuesday, September 24. Last day for dropping a course without incurring a grade of F.

Thursday, September 26. Teacher Education Screening Committee (TESC) math and writing exams.

Saturday, September 28. Completed graduate degree and certificate applications and fees due in Graduate School office for Winter graduation. Degree and certificate applications may be obtained at Office of the Registrar after previous semester’s grades have been posted.

Tuesday, October 1. Last day for filing Ph.D. Economics admissions applications for Spring 1986.

Thursday, October 10. Third deferred tuition payment due.

Sunday, October 13 through Tuesday, October 15. Recess (Note: Monday classes and laboratories meet on Wednesday this week only).
Wednesday, October 16.
Monday classes and laboratories meet on Wednesday at Monday scheduled times and places.
Wednesday scheduled classes and laboratories do not meet this week.

Friday, October 18.
Teacher Education Screening Committee (TESC) math and writing exams.

Thursday, October 31.
Spring Semester Schedule of Classes (registration calendar) published. Mail-in/hand-in registration commences for designated categories of students the day after schedules are distributed. For times and priorities, see Schedule of Classes.

Friday, November 1.
Last day for filing master's, Ph.D. Biology, and Ph.D. Information Technology admissions applications for Spring 1986.

Friday, November 15.
Last day for financial aid applications for Spring 1986.

Friday, November 15.
Winter master's theses due in Office of the Graduate Dean.

Monday, November 18.
Start counseling for Spring Extended Studies enrollees.

Thursday, November 28 through Sunday, December 1.
Thanksgiving recess; University closed.

Friday, December 6.
Last day for mail-in/hand-in registration for Spring 1986. Registration in person continues by priority groups.

Saturday, December 14.
Last day of classes.

Monday, December 16.
Tuition and fees due for early registered students. Payment with late fee will be accepted until January 3.

Monday, December 16 through Monday, December 23.
Examinations (for times, see Schedule of Classes).

Thursday, December 19.
Early registration ends.
Spring Semester 1986

Monday, January 6.
Spring registrations canceled for early registered students who have not made arrangements for payment with cashier. (Students who cancel and do not re-register for Spring are assessed a $20 administrative fee.)

Wednesday, January 8 through Thursday, January 16.
Registration and schedule adjustment (for times and priorities see Schedule of Classes).

Thursday, January 16.
Extra schedule adjustment day for Spring classes.

Monday, January 20.
First day of classes.

Monday, January 27.
Last day for adding new courses (except those meeting only once a week).

Monday, January 27.
Last day for a full tuition refund (less $20 fee).

Monday, February 3.
Last day for filing D.A.Ed. admissions applications for Fall 1986.

Monday, February 3.
Last recommended date for filing financial aid applications for Fall 1986.

Monday, February 3.
Last day for partial tuition refund—second week.

Tuesday, February 4.
Last day for adding those new courses which meet only once a week.

Thursday, February 6.
Second deferred tuition payment due.

Monday, February 10.
Last day for dropping a course without incurring a grade of F.

Monday, February 10.
Last day for a partial tuition refund—third and final week.

Friday, February 14.
Last day for filing Psy.D. admissions applications for Fall 1986.

Friday, February 28.
Completed graduate degree and certificate applications and fees due in Graduate School office for Spring graduation. Degree and certificate applications may be obtained at Office of the Registrar after previous semester’s grades have been posted.

Monday, March 3.
Last day for filing master’s admissions applications for Summer Session.

Thursday, March 6.
Third deferred tuition payment due.

Friday, March 7.
Last day for filing financial aid applications for freshmen and transfer students for Fall 1986.

Sunday, March 9 through Sunday, March 16.
Midsemester recess.

Monday, March 24.
Fall Semester Schedule of Classes (registration calendar) published. Mail-in/hand-in registration commences for designated categories of students the day after schedules are distributed. For times and priorities, see Schedule of Classes.

Friday, March 28.
Completed graduate degree and certificate applications and fees due in Graduate School office for Summer graduation. Degree and certificate applications may be obtained at Office of the Registrar after previous semester’s grades have been posted.

Monday, March 31.
Last day for financial aid applications for Summer 1986.

Tuesday, April 1.
Last day for filing D.P.A., Ph.D. Biology and Ph.D. Economics admissions applications for Fall 1986.

Tuesday, April 1.
Last day for filing Graduate School Fellowship applications from Doctoral Students.

Applications from master’s students. Admission files must be complete.

Tuesday, April 15.
Spring master’s theses and doctoral dissertations due in Office of the Graduate Dean.
Summer Session

Thursday, May 1.
Last day for financial aid applications for returning upperclassmen for Fall 1986.

Thursday, May 1.
Last day for filing master's admissions applications for Fall 1986.

Saturday, May 3.
Last day of classes.

Monday, May 5 through Monday, May 12.
Examinations (for times and snow day make-up, see Schedule of Classes).

Saturday, May 17.
Spring commencement.

Memorial Day observed; University closed.

Tuesday, May 27.
Summer Session begins.

Summer Session
Summer Session consists of several terms, ranging in length from five to eight weeks, during the period May 27 through August 2. Classes are offered Summer Session during both day and evening hours. For details, consult the Summer Session catalog, which is available in March.
Graduate Policies and Procedures
Graduate Policies and Procedures

Admission

For an applicant who wishes to obtain a graduate degree, the general University admission requirements are:

1. A baccalaureate degree or equivalent from an accredited institution of higher education
2. A 2.75 GPA (on a 4.00 scale) or better in the last 60 hours of undergraduate study
3. Undergraduate preparation for the chosen field of graduate study
4. Submission of two copies of all official transcripts from each institution attended and all other documents required by the Graduate School.

Departmental admission requirements for a degree student are listed in the catalog under the relevant discipline.

A degree-seeking applicant with a baccalaureate degree who has not met all other admission requirements may be offered provisional admission if there is sufficient evidence to suggest a capacity to pursue graduate work. A student in provisional status must have as initial objectives the removal of any deficiencies and advancement to degree status.

An applicant who is not interested in pursuing a graduate degree program but who wishes to take one or more graduate courses should request non-degree status in the Graduate School. Although the primary mission of the Graduate School is to conduct programs of instruction leading to graduate degrees, a qualified student who has no immediate degree objectives is welcome to the extent that available University and Graduate School resources allow. An applicant requesting nondegree status must submit a transcript showing that a baccalaureate degree has been earned at an accredited college or university.

Submission of Application

Requests for information about graduate admission, the application for admission and the necessary forms should be addressed to the Admissions Office, Graduate Study, 117 Finley Building, George Mason University, 4400 University Drive, Fairfax, VA 22030, telephone (703) 323-2100. An applicant seeking admission to the Graduate School must submit the following:

1. An application form
2. Two official copies of transcripts from each institution attended, including George Mason University (undergraduate or Extended Studies enrollment), which must be received directly from the institution by the deadline date
3. A $15 application fee (nonrefundable)
4. A Virginia Domicile Classification form
5. Records of examinations (GRE, GMAT, etc.) mailed directly from ETS as required by certain departments (see admission requirements of appropriate program)
6. Letters of recommendation as required by departments (see admission requirements of appropriate program)
7. A notarized Affidavit of Support Form for Foreign Students (J4 and F1 visas)
8. A student from a non-English speaking country must complete the Test of English as a Foreign Language (TOEFL) and attain a score of 550, or higher if required by an academic department.

Application Deadlines

Master's Programs
Fall semester May 1
Spring semester November 1
Summer Session March 3

(M.B.A, M.S. in Accounting, and M.S. in Information Systems do not admit for summer)
Graduate Admission Examinations (GRE and GMAT)

Although a number of graduate programs do not require the Graduate Record Examination (GRE), almost all will use such test scores as an additional measurement of an applicant's qualifications. The GRE may be taken in either or both of two forms: (1) the Aptitude Test, and (2) the Advanced Test. Some departments require official scores for both the Aptitude and the Advanced Test. Information on the test dates for 1985-86 can be obtained by calling Academic Testing (703) 323-2525.

The Graduate Management Admission Test (GMAT) is required of all applicants seeking an M.B.A., M.S. in Accounting, or M.S. in Information Systems. During 1985-86, the GMAT will be administered locally and nationally on the following tentative dates:
- October 19, 1985
- January 25, 1986
- March 15, 1986
- June 21, 1986

Academic Testing in the Office of Admissions administers all academic examinations for the University, including the GRE and the GMAT. Information concerning examinations, test applications and dates may be obtained from Academic Testing, (703) 323-2525. Applicants also may write directly to GRE, Box 955; or GMAT, Box 966; Princeton, NJ 08540. A local telephone number in the Washington, D.C., area for the Educational Testing Service is (202) 659-0616.

Graduate School Foreign Language Tests

Certain graduate programs require students who have not already completed 12 hours of undergraduate credit in a foreign language to satisfy a foreign language requirement. This may be accomplished by taking the appropriate courses or demonstrating the equivalent proficiency by passing an examination. Information concerning the Graduate School Foreign Language Tests (GSFLT) may be obtained from Academic Testing.

Admission of International Students

International students who wish to apply to the University should apply directly to the Admissions Office, 117 Finley. They must meet each of the following conditions:

1. Students must meet all requirements and regulations of the University and their school or department.

2. Students must present with their application for admission official documents certifying their previous educational training and attainments. Graduate student applicants' documents should show the award of either a bachelor's degree, or equivalent, or a graduate degree. Personal student papers, photostats, or attested copies are not accepted for evaluation purposes.

3. Students must have completed the Test of English as a Foreign Language (TOEFL) and normally attained a score of 550, or higher. Graduate student applicants may obtain from the Admissions Office the minimum scores required on the TOEFL test by different academic departments. Foreign student applicants with undergraduate degrees from accredited universities in which the language of instruction for the program was English are exempted from this requirement. Information concerning the time and place of the TOEFL can be obtained from Academic Testing, (703) 323-2525, or from TOEFL Educational Testing Service, Princeton, New Jersey 08549.

4. After an applicant has received and sent a written acceptance of an offer of admission, the I-20 will be provided, upon request, to students requiring an F-1 student visa. International students must enter the United States on a valid student or other visa. Visitor
or transit visas are not valid for enrollment at the University. Students sponsored by the U.S. government or their home government will be required to enter the U.S. on an Exchange Visitor's Visa (J-1).

5. The U.S. Department of Justice, Immigration and Naturalization Service regulations governing nonimmigrant F-1 students require that international students in this category pursue a full course of study (nine credits for graduate students) while maintaining nonimmigrant student status. Students on J-1 or F-1 visas are required to secure an affidavit of support proving that they have a sufficient amount of money to support themselves for the duration of their study. All students holding a J-1 visa or an F-1 visa are required to carry medical insurance either on their own or through the Office of International Programs insurance program. International students must meet and conform to all current regulations of the U.S. Immigration and Naturalization Service.

Admission of Graduate Degree Holders

An applicant holding one of more graduate degrees may earn an additional graduate degree in another discipline. For admission to a second graduate degree program, the applicant should submit an application, transcripts, and other documents as required by the second degree program.

Course credits used to satisfy the degree requirements for the first graduate degree may not be used to satisfy the degree requirements for the second graduate degree at the University.

Offer of Admission to the Graduate School

A written offer of admission is made by the Dean of the Graduate School to an applicant who has been accepted. The offer specifies the effective date of admission, the category of admission offered, and the name of the faculty adviser assigned to the applicant. This offer of admission is good for two semesters, provided the applicant does not take courses elsewhere. A written acceptance or rejection of the offer of admission should be sent to the Graduate School Admissions Office as soon as the applicant has made a decision on graduate study. An individual whose offer of admission has lapsed must submit a new application and fee to be reconsidered for admission at a later date.

Reactivation of Deferred Applications

Applicants are notified when action on an application has been deferred pending completion of prerequisite courses before graduate study in a chosen field can begin. Such an applicant is encouraged to notify the Admissions Office in writing as soon as the prerequisites have been met. It is the responsibility of the applicant to furnish official transcripts confirming that the prerequisite courses have been satisfactorily completed even if they were completed at the University. No admission decision can be made until these grades are received.

Records Maintenance and Disposal

All graduate admission documents, including academic records sent from other institutions, become part of the official University file and can neither be returned nor duplicated for any purpose. A student should maintain copies of official credentials for other personal requirements.

Admission credentials are retained for 24 months only and subsequently destroyed for applicants who (1) do not register for courses within the time period for which the offer of admission is valid, or (2) have been denied admission, or (3) do not respond to requests for additional information, or (4) fail to submit complete applications with respect to the receipt of all official transcripts and test results.

Readmission to the Graduate School

A graduate student whose study at the University is interrupted for any reason for a period of two semesters or more (exclusive of summer sessions) must apply for readmission. Readmission forms are available through the Admissions Office, 117 Finley. The student is responsible for requesting that the Registrar's Office forward to the Admissions Office a recent transcript of all work completed at George Mason University. Since the department chair and the Dean of the Graduate School must approve all readmissions, students are encouraged to complete the forms and return them to the Admissions Office no later than one month prior to the anticipated date of registration. A $15 nonrefundable fee must accompany the readmission form. If such readmission is approved, the student is subject to the academic regulations and requirements in effect at the time of registration after readmission. A student who is readmitted may not count the six-year time limit as beginning on the date of readmission. All degree requirements must be completed within six years from the date of initial registration as an admitted (degree or provisional) graduate student.
Change in Field of Graduate Study

Admission to graduate study is contingent upon a recommendation by the department in which the student proposes to concentrate. Therefore, a student is not free to change graduate programs at will. A student who wishes to change from one program to another in a new field of study must submit a new application and fee for admission. Previous acceptance into one graduate program does not guarantee acceptance into another.

Termination of Admission to Graduate Study

A student may submit an application to more than one graduate program, but may be admitted to only one graduate program at one time. Accepting an offer of admission to a second graduate program automatically terminates admission to the first program. Admission also terminates when time limits have been exceeded or when other conditions for the continuation of admission have not been met.

Extended Studies Enrollment

Administered by the Division of Continuing Education, the Extended Studies Enrollment procedure allows persons who may not meet regular graduate admissions criteria, or who have no immediate degree objectives to request enrollment in courses for which they are qualified without seeking admission to the University. Extended Studies Enrollees are restricted to undergraduate and 500- and 600-level graduate courses. Credits earned by students as Extended Studies Enrollees are recorded on regular University transcripts.

Extended Studies Enrollees who wish to apply for graduate admission to the University may do so at any time by following the regular graduate admission procedures.

If a student applies for admission to the Graduate School and is accepted into a degree program, a maximum of 12 hours of graduate credit earned through Extended Studies Enrollment may be applied toward a master's degree program with approval of the Graduate Dean. The student is responsible for having transcripts of credits earned through Extended Studies enrollment sent to the Graduate School. After admission to the Graduate School and during initial registration as a degree student, the student is responsible for initiating such a request on a Transfer of Credit/Application of Extended Studies Credit Form to apply Extended Studies credit toward degree requirements. If the student also has transferable credit from another institution, the amount of applicable credit earned through Extended Studies Enrollment is reduced accordingly.

Guest Matriculant

A graduate student admitted to another graduate school may be given permission to register on a temporary basis as a guest matriculant. This admission as a visiting student is usually for one semester. A guest matriculant must have been officially admitted as a graduate student at another recognized university and certified by his or her dean as being in good standing. An application form for requesting guest matriculant status may be obtained from the Graduate School Admissions Office.

Graduate Study during Summer Session

Applicants wishing to begin graduate work in summer must complete a Graduate School application before submitting a Summer Session enrollment form. There is a $15 nonrefundable charge for each form.

Qualified students may also take graduate summer courses through the Division of Continuing Education’s Extended Studies Enrollment Program.

Students who wish to complete graduation requirements during Summer Session enrollment should understand that the University does not necessarily offer all required courses in any particular Summer Session.

http://catalog.gmu.edu
Registration

Permission to Register as a Graduate Student

Registration in the Graduate School is permitted only after the student has been notified of admission by the Dean of the Graduate School. During course registration, admitted students are given preference over nonadmitted students if the number of applicants exceeds the enrollment limits. Dual registration (e.g., as a graduate student and as an Extended Studies Enrollee) is not permitted.

The graduate student is responsible for being properly registered and aware of all regulations and procedures required by a program of study. Regulations and degree requirements are not waived nor are exceptions granted because of ignorance of University, Graduate School, or departmental regulations.

Academic Advising for Graduate Students

At the time of admission to graduate study, the student is assigned a faculty adviser by the department responsible for the student's program of study. Registration for newly admitted graduate students, as well as continuing students, begins with a visit to the student's academic adviser. There the student can obtain information about specific courses and degree requirements and develop an individual program of study. Progress in an approved program of study is a shared personal responsibility of the student and the adviser. The graduate student is responsible for compliance with the rules and procedures of the Graduate School and all applicable departmental requirements which govern the individual program of study. The student should consult with the adviser before registration each semester.

Schedule of Classes and Course Approval Form

In developing a program of study with the adviser, the graduate student will need to consult the Schedule of Classes, distributed in advance of each registration period by the Registrar's office. It provides information about the times and locations of classes, the names of course instructors, the final examination schedule, and procedures for paying tuition and fees. Dropping or adding a course and procedures for making other changes in registration are also outlined in the schedule.

The Schedule of Classes is mailed by the Graduate School only to newly admitted graduate students. If for some reason a newly admitted student does not receive the Schedule of Classes in the mail, it is available in the faculty adviser's office. Continuing students will find schedules in their departments, at the information desk in the Student Union, at the information desk in Finley Building, and at the Registrar's Office. No course listed in the Schedule of Classes will be offered for which there is insufficient enrollment. The University reserves the right to change the class schedule and to adjust individual section enrollments as necessary.

The Schedule of Classes also contains the Course Approval Form to be used at the time of registration. For each registration the student, consulting with the adviser, prepares a schedule of courses appropriate to satisfying degree requirements and individual needs. This schedule is then entered on the Course Approval Form. For newly admitted graduate students, the schedule of courses must be approved by the faculty adviser prior to registration.

Registration Procedures and Information

The Schedule of Classes contains instructions for registering. Any graduate student who fails to appear within the period specified for registration will not be permitted to register unless the delay can be explained to the satisfaction of the Graduate Dean.

As part of registration, each student is issued an official University identification card. It must be presented when obtaining a library card and may be required for admission to University events or when using University facilities after normal operating hours. It is not transferable and must be validated at registration each semester.

Each student is required to notify the Office of the Registrar and the Graduate School of any change of home address, telephone number, or change of legal name.

Student Information

Before or during each registration period, all students are asked to provide directory and other types of information used in preparing a student's education record and numerous statistical reports. Such information is collected and disseminated in compliance with the Family Educational Rights and Privacy Act of 1974, as amended, which provides that the University maintain the confidentiality of student education records and establish the right of students to inspect and challenge the data maintained in those records. Personally identifiable data from a student's education record may only be released to persons described in the Act, including
"school officials with a legitimate educational interest."

The University may release directory information to any outside party at its discretion except when a student requests in writing that some or all directory information be withheld.

Category I of directory information includes: student’s dates of attendance; major(s); full or part-time status; awards received.

Category II of directory information includes: student’s address; telephone number(s); date and place of birth; participation in recognized activities and sports; weight and height (normally given only for athletics); most recent previous institution attended; and other similar information.

Students desiring to withhold directory information from the public should request such withholding in writing to the Registrar at the time of registration for a semester or summer session. Since such withholding may prohibit the Registrar from providing confirmation of enrollment to prospective employers or even residence address to the student’s own family, students who are considering such a request should consult the Registrar.

Students may inspect their education records and obtain more information about the Privacy Act at the Office of the Registrar and may obtain copies of most parts of their records for a nominal fee. Those desiring to do so should schedule an appointment with the Registrar.

Academic Load

Graduate students are urged to register each semester for only that number of hours which they can successfully complete. The minimum full-time academic load is nine hours per semester during the regular academic year. A normal full-time academic load is 12 semester hours. During the summer, a normal full-time academic load is nine semester hours for the entire session. Permission of the department chair is required to exceed the normal load.

Graduate students are expected to attend all of the class periods of courses for which they are registered and to meet all course requirements set by graduate faculty as scheduled for a class or seminar.

Graduate Course Enrollment by Undergraduates

A student may seek to take a 500-level graduate course either for reserve graduate credit or for undergraduate credit.

Approval to register for reserve graduate credit (earned credit held in reserve to apply later toward a graduate degree) is normally given only to George Mason seniors within 15 hours of completion of undergraduate study. In addition, this privilege is normally extended only to seniors who have completed a minimum of 12 semester hours at the University, have a cumulative grade point average of 3.00 or better, have successfully completed all prerequisite courses and have a major in the department offering the courses. Permission must be obtained in writing prior to registration. Forms are available in the Graduate School Admissions Office. It is the student’s responsibility to obtain all signatures required and to submit a current transcript with the request.

Approval for reserve graduate credit does not imply approval for admission into a graduate program at the University or that credit so earned will be accepted at another graduate school. Credit for the same course is not given toward both graduate and undergraduate degrees.

Graduate School policy permits undergraduates to enroll in graduate courses numbered 500 to 599 and apply the credit earned toward an undergraduate degree. For details of requirements and procedures see Graduate Course Enrollment by Undergraduates in the Undergraduate Policies and Procedures section of the undergraduate catalog.

Adding and Dropping Courses

To add or drop a course during the add/drop period, a graduate student must complete a Schedule Change Request Form and submit it at the Registration site, Module C. Forms may be obtained from the department, Office of the Registrar, or the Registration site.

The last day for adding a course that meets once a week is two calendar weeks after and including the first day of classes. For a course that meets more than once a week, the add period is one week.

The last day for dropping a course is three calendar weeks after and including the first day of classes.
Withdrawal from a Semester

A graduate student who is enrolled in one or more courses is considered in attendance until formally withdrawn by submitting an official withdrawal form. A graduate student who drops all courses in any semester must submit an official withdrawal form.

Upon approval by the Graduate Dean, a graduate student may withdraw from a semester after the drop period without academic penalty, but only for nonacademic reasons which prevent completion of the courses. A graduate student who stops attending a semester after the drop period without the Dean’s approval receives Fs in all courses.

Upon withdrawal, the following notation is made on the student’s permanent record: “Withdrew voluntarily for nonacademic reasons on (date) in the __-week of a __-week semester.” A list of the student’s courses follows, together with W grades.

A graduate student withdrawing before the final examinations in any semester or summer session forfeits credit for work done in that term.

The Graduate School may impose enforced withdrawal as a penalty for any fault which prevents the graduate student from fulfilling the purposes of enrollment.

Repeating a Course

A graduate student who has passed a course with a grade of B or better is not permitted to repeat the course. A graduate student may repeat a course in which a grade of C or below has been earned. Permission for repeating the course must be obtained from the department offering the course. Each department establishes procedures for granting permission for repeating a course.

When a course is repeated, all hours attempted count toward probation or dismissal; the transcript shows both the original and repeat grades; and only one grade per course may be presented on the degree application.

Auditing a Course

Auditing a course requires the permission of the department chair in which the course is offered. A previously audited course may be taken for credit at a later date. A graduate student may also audit a course previously taken and passed. A graduate student may not change from credit to audit status after the drop period. The usual tuition and fees apply to audit status.

Final Examinations Policy for Graduate Courses

Written examinations are held at the end of each semester. No changes may be made in the announced examination schedule unless approved in writing by the department chair offering the course.

In certain graduate courses the assessment of student performance may be more closely related to written and/or oral papers; and because of the more intensive and continuous demands which should be placed upon students, it would appear appropriate to provide a degree of flexibility in connection with graduate examinations. Therefore, after consulting the department chair, the individual faculty member may exercise judgment regarding the use of a formal examination at the end of the course.

Absence from examination is not excused except for sickness on the day of the examination, or for other cause approved by the Graduate Dean. If such absence is unexcused or the examination is not taken within ten days, the grade on the course is entered as F. A student whose absence from an examination is excused may take a special examination within the 10-day period on a date to be arranged between the student and the instructor in charge of the examination. A request to take an examination late should be made on a Student Request Form and submitted by the graduate professor to the Graduate School office.

Grading System

The grading system for graduate credit is A, B (satisfactory), and C, F (unsatisfactory). Thesis and dissertations may be assigned a letter grade or S (satisfactory), NC (no credit), or IP (in progress). The mark of IN (Incomplete) may be given when all course requirements have been completed except for assigned papers or reports which the student has been compelled to postpone for reasons beyond the student’s control. Regulations concerning Incomplete marks may be found under Change of Grade below.

Grade points for each semester hour are assigned on a scale of 4 for A, 3 for B, 2 for C, and 0 for F. A grade point score is computed by multiplying the value of the letter grade by the number of credits for the course. As an example, a student receiving an A in a three-semester-hour course earns 12 grade points. Dividing the number of grade points earned by the number of semester hours attempted gives the GPA. (Note: The marks of S, NC, and IP have no
grade points associated with them and hours with such marks are not included in GPA computations. NC and IP have no negative impact on a student’s record.)

A grade point average does not appear on the transcripts of graduate students.

Each faculty member is responsible for preparing course examinations and determining grades. Policies concerning the weight given to examinations in computing final grades and the kinds of examinations used may differ according to the preferences of individual instructors.

Grade reports are sent to the student and to the adviser each semester in which the student is registered, including those in which the student withdraws. The report includes all courses for that semester and the grades received, the cumulative hours of satisfactory grades and the cumulative hours of unsatisfactory grades.

Change of Grade

Final grades in courses for graduate credit may be changed only on the basis of the following two circumstances and procedures.

Change from Incomplete and In Progress to Letter Grade. For cause beyond reasonable control, a student may be unable to complete the course work on schedule. In such cases, the instructor may assign a temporary grade of Incomplete (IN). If the student fails to complete all requirements in time for the instructor to assign a regular grade by the last day of classes of the next semester (exclusive of Summer Session), the mark of IN is changed by the Registrar to F. It is the student’s responsibility to submit the work to the instructor with sufficient time for its evaluation.

While the mark of IN remains on the transcript, it is treated as an unsatisfactory grade and may contribute to dismissal. A mark of In Progress (IP) is used for courses numbered 999, 998, 799, 798; internship courses and some other courses until such time as all course work is completed. IP is not treated as an unsatisfactory grade, nor is it subject to the time limit prescribed for IN. Note that IP can be changed to any regular grade, with one exception. When comprehensive seminars or other such registrations are repeated through successive registrations, then only the final registration receives a grade. The previous IPs remain unchanged in such cases.

Change of Final Grade. Once a final grade in a course has been recorded by the Registrar, it can be changed only in cases of computational error or other justifiable cause approved by the Graduate Dean. (Refer to “Challenge of Grade” procedure below.) All changes of final grades must be initiated, approved, and recorded prior to the last day of classes of the next regular semester (exclusive of Summer Session).

Challenge of Grade

Although generally the individual faculty member must be the best judge of student performance, there may be instances in which a graduate student believes a grade has been assigned unfairly. In such cases the student should ask the professor to reconsider the grade. If the student is not satisfied, an appeal may be made to the department chair, who initiates procedures established by the department. No challenge of a grade is considered after the end of the drop period of the next regular session (exclusive of Summer Session).

Academic Dismissal

A graduate student performs satisfactorily during any academic period (semester or summer session) in which the student received satisfactory grades in more than two-thirds of the credit hours undertaken during that period. A graduate student is dismissed upon accumulating 12 hours of unsatisfactory grades in graduate-level courses. The notation of academic dismissal is affixed to a graduate student’s official record.

Change from Provisional to Degree Status

In order for a change from provisional status to be considered, a graduate student must have completed 12 semester hours of graduate work in provisional status, supplied all admission credentials, and removed all deficiencies established at the time of admission. Appropriate admission credentials, such as transcripts, letters of recommendation, or test scores needed for consideration for a change of status, must be submitted to the Graduate School Office. Written confirmation from the Graduate School Dean indicating the change of status will be sent to the student.

Credits earned in the provisional status may be used subsequently in meeting minimum hour and program degree requirements. However, a
maximum of 12 graduate credits earned in non-degree status may be applied toward a master's degree. Students admitted in these categories are, therefore, strongly urged to obtain faculty guidance before beginning course work. Credits cannot be applied toward a graduate degree unless they are specifically approved for that purpose.

Transfer of Credit for Work Taken Prior to Admission

With the recommendation of the appropriate program faculty and approval of the Graduate Dean, a graduate student may transfer up to six semester hours of graduate credit earned at other accredited institutions prior to acceptance and enrollment in University Graduate School to be applied toward the requirements for a master's degree. Up to 12 semester hours may be applied toward a doctoral degree. In addition, if a student has earned a master's degree prior to admission to a doctoral program, the number of hours required for the doctoral degree may be reduced. Undergraduate courses taken at other institutions are not transferable for credit to graduate programs within the University. All graduate work offered as transfer credit must be applicable to the degree program the student is pursuing at the University.

Credit is normally considered for transfer, upon the request of the student, at the time of initial registration as a degree student. Transfer of credit requests from provisional students will not be considered until they are advanced to degree status. Written confirmation from the Graduate Dean of all credits approved for transfer will be sent to the student.

Criteria for Transferable Credit

In all cases of courses accepted for transfer of credit, including those taken within the Consortium for Continuing Higher Education in Northern Virginia and Continuing Education at George Mason, a minimum grade of B must have been earned, and the courses involved must be applicable toward a comparable degree at the institution offering the course. Extension and in-service courses which are not intended by the institution offering the courses to be part of a degree program are not acceptable for transfer to the University. It is the student’s responsibility to furnish evidence that any courses presented for transfer of credit would be applicable to a comparable degree at the institution where the credits were earned. If this information is not on the official transcript, it must be obtained in writing from the appropriate dean at that institution.

The Graduate Dean decides whether work taken elsewhere and presented for transfer credit to a graduate program at the University is acceptable.

Courses at Other Institutions

After enrollment as a degree student and with the prior approval of the department chair and the Graduate Dean, a student may, when need exists, earn up to 6 additional hours of transfer credit applied to the master’s degree or 12 hours applied to the doctoral degree for graduate courses to be taken at another accredited institution. Permission to take a course elsewhere must be secured from the Graduate Dean prior to registering at the other institution. Forms are available in the Graduate School office. The student is responsible for requesting transfer credit for such courses after their completion and for having an official transcript submitted to the Graduate School office for evaluation of possible transfer of credit. Permission is not ordinarily given for a student to take a course elsewhere for transfer credit during the semester in which a student is advanced to candidacy or the semester in which the degree is to be awarded. Also permission does not exempt a graduate student from satisfying the 18-hour minimum for a master’s degree or the 36-hour minimum for a doctoral degree of course work taken at the University. (See Requirements Applicable to All Graduate Degrees.)

Student Requests and Appeals

A graduate student who wishes to request an exception to published academic regulations or to appeal decisions involving the application of academic regulations to a program of study may do so by submitting a petition to the Graduate Dean. Such a request should be initiated by a graduate student and must be restricted to those matters directly affecting academic progress. Graduate departments provide a mechanism for grade appeal. Thus all grade appeals should be submitted to the department responsible for the course.

The petition to the Graduate School must include the signature and recommendation of the graduate adviser and the department chair. Student Appeals Forms for such purposes are available from department offices or the Graduate School office. It is the responsibility of the graduate student to present relevant information or documents in support of an appeal. If the request or appeal is to be heard by the Student Appeals Subcommittee, the student will be notified of the time and place of the meeting. It is the decision of the graduate student whether or not to attend the Subcommittee meeting.
to present written or verbal information. The Subcommittee will make a recommendation to the Graduate Dean.

While such meetings are academic and collegial and not legal hearings, a student is welcome to present relevant supporting documents. No appeal can be made of the decision of the Graduate Dean.

Requirements Applicable to All Master’s Degrees

Master’s Degree Requirements

Candidates must satisfy all Graduate School degree requirements and all requirements set by the program faculty of the department in which the master’s program is offered. Specific departmental degree requirements are listed under the respective graduate programs in this catalog.

In order to meet the degree requirements applicable to all master’s degrees, a candidate must:

1. Have acquired a minimum of 30 semester hours of graduate credit

2. Present only graduate-level courses in which satisfactory grades have been received. A graduate student may apply up to six hours of C grades in graduate-level courses

3. Have completed at least 18 semester hours of graduate-level work at the University after having been admitted to degree or provisional status

4. Have completed at least 24 semester hours at the University of which:
   a. A maximum of six semester hours may be in master’s thesis research (799) or in master’s project research (798)
   b. A maximum of two courses or six semester hours taken prior to academic year 1982-83 may be upper-level undergraduate courses approved for graduate credit
   c. No more than 12 semester hours may have been earned through enrollment in nondegree status or through Extended Studies Enrollment prior to acceptance in a degree program
   d. No more than six semester hours may be transfer credit for course work taken prior to admission with the amount of applicable credit earned in nondegree status or through Extended Studies Enrollment reduced accordingly (exceptions are noted under individual degree programs)
   e. A maximum of six semester hours may be transfer credit taken after admission to the Graduate School.

5. Have completed all courses submitted for the degree within a period of six years.

Master’s degree candidates are subject to those degree requirements in force at the time of their initial registration in degree or provisional status following admission. Degree candidates who have been readmitted following voluntary withdrawal for more than one semester are subject to those degree requirements in force at the time of their initial registration following readmission. All degree candidates have the option of graduating under the degree requirements in force at the time the degree is to be awarded.

Residence

Normally, at least 24 semester hours must be completed at the University. A completed master’s degree program must include a minimum of 18 semester hours of course work taken at the University as a degree-seeking student.

Time Limit

A student must complete all degree requirements for the desired master’s degree within six years from the date of initial registration as an admitted (degree or provisional) graduate student. A graduate student who terminates enrollment and subsequently is readmitted to the Graduate School in the same master’s program may not count the six-year time limit as beginning on the date of readmission.

Foreign Language Requirement

Several master’s degree programs require that a master’s student demonstrate a proficiency in one or more foreign languages, as part of the degree requirements established by the program faculty. Such a requirement is listed under the degree requirements for a specific master’s degree in the academic program section of this catalog. Certification of the successful completion of the foreign language requirement should be sent by the academic adviser to the Graduate School office.

Thesis and Non-Thesis Options

Requirements regarding a thesis vary with the degree program. A number of master’s programs provide for either a thesis or non-thesis option. The quality of the work expected of the student electing the non-thesis option is identical to that of the thesis
option. For further information, consult the section on degree requirements under each degree program.

Master's Thesis

When a thesis proposal has been approved by the appropriate department, the department chair sends to the Graduate Dean a copy of the thesis proposal, including the names of the master’s thesis committee members. The student may enroll in the thesis research course (799) at the beginning of the next semester.

The master’s thesis committee is named by the candidate’s department chair, who also designates the major professor as chair of the master’s thesis committee. The committee is appointed after consultation with the candidate and the adviser, and consists of at least three persons, one of whom may be chosen initially, or at a later date, from outside the department.

The major professor of the thesis committee is primarily responsible for directing and guiding the candidate’s research and writing activities. It is the responsibility of the student to keep all committee members informed of the scope, plan, and progress of both the research and the thesis.

Any student wishing to elect the thesis option should obtain from the Graduate School office a copy of Guide for Preparing Graduate Theses, Dissertations, and Projects. The student is permitted to register in the thesis course (799) only after a thesis proposal has been submitted and approved as prescribed in the Guide.

Thesis Submission and Fee

The original and one copy of the thesis must be deposited with the Graduate Dean on or before the date specified in the Academic Calendar. Any student not in attendance at the University who is preparing a thesis under the active supervision of a member of the faculty, or who wishes to take an examination, must either maintain continuous registration for at least one hour per semester, or pay the special registration fee from the time the student first enrolls for thesis credit until the student completes the degree.

Degree Application for a Master's Candidate

Master's students who expect to complete all degree requirements in the semester must secure a degree application from the Office of the Registrar and return it completed to the Graduate School office by the date designated in the Academic Calendar. There is a $15 graduation fee, which is payable at the time the student submits the degree application. Any student who fails to complete degree requirements in that semester for which the degree application was filed must submit a new degree application and another $15 graduation fee by the next appropriate deadline.

Commencement

Commencement exercises provide an opportunity for master's candidates and their families to share in the experience of the conferral of academic degrees. Degree candidates who do not wish to participate in the formal graduation ceremonies should notify the Office of the Registrar at least six weeks prior to the date and time of the ceremony.

Requirements Applicable to All Doctoral Degrees

Degree Requirements

A candidate for a doctoral degree at George Mason University must satisfy all Graduate School degree requirements and all requirements established by the doctoral program faculty. Specific program degree requirements are listed under the appropriate academic programs in this catalog.

In order to meet the degree requirements applicable to all doctoral degrees, a doctoral candidate must:

1. Have acquired beyond the baccalaureate degree a minimum of 72 semester hours of graduate credit
2. Have completed at least 36 semester hours of graduate-level work at George Mason University after having been admitted to doctoral degree status
3. Have completed at least two semesters, not including the Summer Session, in continuous registration
4. Have filed in the Graduate School office a program of study approved by the doctoral supervisory committee within two years after admission to doctoral degree status of which:
   a. A maximum of 24 semester hours may be in doctoral dissertation research (999) or doctoral project research (998)
   b. No more than 12 semester hours of graduate credit may have been earned through enrollment in nondegree status or through Extended Studies
Enrollment prior to admission to doctoral degree status

c. The number of hours required for a doctoral degree may be reduced if a master’s degree has been earned prior to admission

d. A maximum of 12 semester hours may be transfer credit taken after admission to doctoral degree status.

5. Have passed a written doctoral candidacy examination as certified by the doctoral supervisory committee

6. Have passed an oral final doctoral examination as certified by the doctoral supervisory committee and Graduate School representative

7. Have submitted to the Graduate School office and have defended at the time of the final doctoral examination a doctoral dissertation or doctoral project that has been approved by the doctoral supervisory committee, Graduate School representative and the Graduate Dean

8. Have completed all degree requirements within five years following the semester of advancement to candidacy.

Doctoral students are subject to those degree requirements in force at the time of their initial registration doctoral degree status following admission to the Graduate School. Doctoral students who have been readmitted following voluntary withdrawal for more than one semester are subject to those degree requirements in force at the time of their initial registration following readmission. All doctoral candidates have the option of graduating under the degree requirements in force at the time the doctoral degree is to be awarded.

Residence

All doctoral students are required to spend a minimum of two consecutive semesters, not including the Summer Session, in continuous registration. The doctoral program of study must include a minimum of 36 semester hours of graduate work taken at George Mason University after admission to a degree-seeking status.

Time Limit

A doctoral student must complete all degree requirements within five years following the semester of advancement to candidacy. A doctoral student who voluntarily terminates enrollment and is subsequently readmitted to the Graduate School in the same doctoral program after advancement to candidacy is still subject to the five-year time limit commencing with advancement to candidacy.

Doctoral Supervisory Committee

At the time a doctoral student is to be considered for advancement to candidacy, normally by the end of the second year of full-time graduate study, the Dean of the Graduate School will appoint a doctoral supervisory committee upon recommendation by the department chair. The committee shall consist of a major professor and at least two other members of the Graduate Faculty, one of whom must be a member of the Graduate Faculty from outside the doctoral student’s department. Additional members may be appointed who are not members of the Graduate Faculty or who are from outside the University. The major professor shall be the chair of the committee. It is generally the responsibility of the doctoral supervisory committee to approve the program of study, certify the successful completion of the candidacy examination (which may include an oral part in addition to the written part), approve the doctoral dissertation, where required, and certify the successful completion of the final doctoral examination (which may include a written part in addition to the oral part). In addition, the Graduate Dean will appoint to the doctoral supervisory committee a Graduate School representative from the Graduate Faculty who will attend the final doctoral examination.

Doctoral Research Skill Requirements

Some doctoral degree programs require, as part of the degree requirements, demonstration of proficiency in a research skill area. These may take the form of a reading knowledge of the research literature in a foreign language, knowledge of a computer language, knowledge of statistical methods, or knowledge of a research tool specific to the discipline. Research skill requirements are included with the degree requirements for the specific doctoral degree. Where required, the certification of successful completion of research skill requirements must be completed for advancement to candidacy. Forms for certification purposes are available in the Graduate School office.

Program of Study

Normally, before the end of the second year of graduate study, but no later than consideration for advancement to candidacy, a doctoral student must submit a program of study for approval by the Dean of the Graduate School. The program of study must
include major courses to be completed, any supporting courses, research skills required, subject areas to be covered by the candidacy examination, and proposed date for candidacy examination. The program of study must be signed by the major professor and all members of the doctoral supervisory committee. Program of Study forms are available from each program’s doctoral coordinator.

Advancement to Candidacy

Advancement to candidacy implies that a doctoral student has demonstrated both a breadth and depth of knowledge in his field of study and is capable of exploring problems on the boundaries of knowledge. A doctoral student should normally be considered for advancement to candidacy by the end of the second year of full-time graduate study. The candidacy examination includes a written part and may include, depending upon the particular doctoral program, an oral part. Where an oral portion is required, some programs consider the written and oral portions as one in determining the passing or failing of the candidacy examination, while in other programs the two parts may be passed or failed separately. Doctoral students should consult the degree requirements for each doctoral program as to the requirements for the oral, if required, the number of times a failed candidacy examination may be repeated, any time limits for repeating, and any time limits by which the candidacy examination must be attempted.

Before a doctoral student may be advanced to candidacy by the Dean of the Graduate School, a doctoral student should have completed all doctoral program examinations required by the program faculty, have been certified in all doctoral research skills required, passed the candidacy examination, and be recommended by the doctoral supervisory committee. Report on Candidacy Examination and Recommendation for Advancement to Candidacy forms are available in the Graduate School office.

Doctoral Dissertation and Non-Dissertation Options

A dissertation is required for the Doctor of Philosophy degree and some of the professional doctoral degrees. The dissertation is a written piece of original thinking that demonstrates the doctoral candidates mastery of the subject matter, methodologies, and conceptual foundations in their chosen field of study. This is achieved generally through consideration of a problem on the boundaries of knowledge in the discipline. Although by no means less demanding, some of the professional doctoral degree programs do not require the preparation of a dissertation. These professional doctorates provide for other means by which the candidates may demonstrate their intellectual competencies and personal abilities.

Doctoral Dissertation

After the appointment of the doctoral supervisory committee by the Dean of the Graduate School, a doctoral student should begin discussions with the student’s major professor to define a suitable problem for the dissertation. However, before a doctoral student may enroll for doctoral dissertation research (999), a dissertation proposal must be approved by the doctoral supervisory committee and sent to the Dean of the Graduate School for approval. The content and format of the doctoral dissertation proposal may be found in the Guide for Preparing Graduate Theses, Dissertations, and Projects, which is available in the Graduate School office.

The major professor (Director) of the doctoral supervisory committee is primarily responsible for directing a doctoral candidate’s research and guiding the preparation of the written dissertation. Format and style for the dissertation are discussed in the Guide for Preparing Graduate Theses, Dissertations and Projects. The Guide also includes information on the number of copies required, binding, and submission of the dissertation for approval by the doctoral supervisory committee and Graduate Dean. All copies of the dissertation must be submitted and fees paid before the doctoral degree will be awarded.

Dissertation Submission and Fee

The original and one copy of the dissertation must be deposited with the Graduate Dean on or before the date specified in the Academic Calendar. Any student not in attendance at the University who is preparing a dissertation under the active supervision of a member of the faculty, or who wishes to take an examination, must either maintain continuous registration for at least one hour per semester or pay the special registration fee from the time the student first enrolls for dissertation credit until the student completes the degree.

Final Doctoral Examination

As soon as all degree requirements have been satisfied, including the completion of the doctoral dissertation where required, a doctoral candidate
may arrange with his or her doctoral supervisory committee to petition the Dean of the Graduate School to schedule the final doctoral examination.

The final doctoral examination shall include an oral defense of the dissertation, where a dissertation is required by the doctoral program. It should also demonstrate the candidate’s intellectual command and maturity of judgment of those branches of the field of study chosen by the candidate in conjunction with the doctoral supervisory committee. Some doctoral programs may require, in addition to the oral portion of the examination, a written part as listed under the degree requirements for each doctoral program. Depending on the particular program, a passing or failing mark may be assigned to the oral and written portion independently or taken as a single examination.

At the close of the final doctoral examination, the doctoral supervisory committee will make final judgments for approving the doctoral dissertation, which may require some minor changes resulting from the oral defense. The doctoral candidate is responsible for making all required changes promptly, securing the signatures of the major professor and other members of the supervisory committee, and submitting the original and one copy to the Graduate School office for the Graduate Dean’s approval.

Doctoral Degree Application

At the beginning of the semester in which a doctoral candidate expects to finish all degree requirements, including the final doctoral examination, the candidate should submit to the Graduate School office a doctoral degree application and pay the $15 graduation fee. Copies of the doctoral degree application form can be obtained in the Registrar’s office. The degree application should be submitted by the date designated in the Academic Calendar. If for any reason a doctoral candidate fails to complete all degree requirements in the semester for which the degree application was filed, a new degree application and a $15 graduation fee must be submitted by the next appropriate deadline.

Commencement Exercises for Doctoral Degree Recipients

Commencement exercises provide an opportunity for doctoral candidates to receive public recognition for their achievements. For those who have completed doctoral dissertations, the titles will be read at the time of the hooding ceremony. If a doctoral candidate cannot participate in the ceremony, then the candidate should notify the Office of the Registrar at least six weeks before the ceremony begins.
University Facilities and Resources
University Facilities and Resources

Libraries and Special Collections

The students, faculty, and staff of George Mason University have access to library facilities on both campuses. The libraries are open for use by the general public; borrowing privileges are extended to those holding valid Library Borrower's Cards. This includes authorized borrowers from member institutions of the Northern Virginia Consortium and the Consortium of Universities of the Washington metropolitan area, various corporate borrowers, and Friends of the Library.

The combined libraries contain 448,000 volumes, acquire approximately 20,000 new books each year, and receive over 3,800 periodicals. Fenwick Library, the central collection on the Main Campus, contains over 248,000 book volumes, 350,000 microforms, and subscribes to 3,100 periodicals. The Law Library at the Metro Campus includes over 200,000 book volumes and subscribes to 700 legal and law-related journals.

Fenwick Library has been a selective depository for U.S. government documents since 1969. Additional government publications and other specialized collections are available in the microforms collection of the library (e.g., ERIC, Human Relations Area File, Library of English Literature, Library of American Civilization). Those items not available at the University may be borrowed through the library's computerized interlibrary loan service. Special services for the disabled include a TTY for hearing-impaired persons and a Kurzweil Reading Machine for the visually impaired.

Fenwick Library offers students a wide range of audiovisual services, including small-group viewing facilities for video cassettes, laser discs, 16 mm. films, slides, and filmstrips, and listening facilities for audiotapes and records. Osborne 1 microcomputers are available for loan to faculty, as well as assistance with film borrowing and rental arrangements. The Library Audiovisual Resource Center has a growing collection of media in most formats and is staffed during all regular library hours. Audiovisual equipment may be borrowed for use on campus from distribution sites in both Robinson and Thompson Halls. These offices also offer a variety of technical services, including audio and video recording and photographic slide production.

The Washington metropolitan area represents one of the premiere library and information resources in the nation, including the Library of Congress, the National Archives, the Smithsonian Institution, the Folger Shakespeare Library, Dumbarton Oaks, the National Library of Medicine, the National Agricultural Library, and the World Bank. There are also numerous university libraries and specialized collections. Fenwick Library is a member of the Consortium of Universities of the Washington Metropolitan Area, providing direct borrowing privileges at the other participating universities for faculty and degree-program graduate students. Fenwick Library also participates in a data base sharing program with the Fairfax County Public Library System and the MITRE Corporation.

The University Library also houses special collections and archives containing primary resource materials to be used by scholars in their research. More than 50 collections include these source materials for research:

The Federal Theatre Project Collection. Placed on permanent loan from the Library of Congress, this contains the major playscripts, radioscripts, sets, costume designs, and other creative materials produced by the Federal Theatre of the 1930s.
Northern Virginiana. This includes the papers of Congressman William Scott, historical collections from C. Harrison Mann, including rare historical maps, atlases, geographies, and law books relating to Virginia, and other papers of public officials.

Photographic Collections. Prints and negatives, including those of Ollie Atkins, correspondent and photographer for the Saturday Evening Post and official White House Photographer from 1965 to 1974.

Rare Books. Includes first editions and rare historical materials.

The George Mason University Archives.

For further information about Fenwick Library, call 323–2616 or the main reference desk at 323–2392.

University Computing Services

University computing services are the responsibility of the Associate Senior Vice President for Computers and Information Systems (CIS).

Administrative Information Systems (AIS) operates an administrative computer center with Hewlett-Packard 3000 computers. The Office of Information Resource Management (OIRM) supports staff computer training, maintains the George Mason local area network (Masonet) and microcomputers located in administrative offices, and develops statistical summaries for administrators.

Academic Computing Services (ACS) operates Control Data Corporation Cyber 170/730 and 180/830 mainframe computers and a Hewlett-Packard 2000 minicomputer. ACS also manages two microcomputer laboratories containing Apple, IBM, and Televideo personal computers. ACS maintains four public terminal clusters, two faculty terminal clusters, two microcomputer clusters, and a CAD/CAM graphics laboratory. Consultant support is available for students and faculty. Both AIS and ACS have administrative offices and computers in the basement of Thompson Hall.

ACS publishes the Academic Computing User Guide that describes academic computing facilities and support. New developments in academic computing support are announced in the ACS bimonthly publication, Academic Computing Services Newsletter. The Newsletter is available to faculty and staff by subscription and is posted in the Thompson computer center for students.

Computer systems at the University are connected by Masonet, the George Mason local area computer network. This state-of-the-art Sytek broadband communications network enables individuals across campus to access computers located in the basement of Thompson Hall. Faculty and students may also use ACS computers through telephone dialup.

Special purpose computer facilities exist for faculty research. The Computer and Information Sciences department operates two Hewlett-Packard 1000 minicomputers and a Digital Equipment Corporation (DEC) PDP 11/44. The Engineering department operates a DEC PDP 11/34 minicomputer and a microcomputer development system. Other University departments have microcomputers designated for specific purposes.

For further information concerning University computer facilities or capabilities, call 703–323–2941.

Electron Microscope

The Biology Department uses high-resolution transmission and scanning electron microscopes in the graduate biological ultrastructure course and for graduate and faculty research. Problems currently under investigation include studies of fine structure of marine bacteria and nerve, endocrine, excretory, vascular, and muscle cells of vertebrate and invertebrate animals.

Holbert L. Harris Theatre

The Holbert L. Harris Theatre, located in Robinson Hall, is George Mason's Main Campus performance facility for dance, music, and theatre. This 533-seat modified proscenium theatre houses dance events, music concerts, recitals, theatre productions, and major conference events.
Educational Centers

The Center for Government, Society, and the Arts

The Center was established in 1980 to take advantage of the University's location and resources by developing programs based on the reciprocal relations among government, society, and the arts. Staffed by regular and visiting faculty from various disciplines, the Center has five major goals: (1) to serve as a focal point for government, society, and the arts; (2) to stimulate innovative research on public and social policy for the arts; (3) to help make the cultural resources of the university available to artists, art organizations, and the people of the Washington metropolitan area; (4) to enlist interest in the University's art programs; and (5) to develop assisting artists and arts organizations throughout the Washington metropolitan area. The Institute on the Federal Theatre Project and New Deal Culture is part of the Center and makes use of the major archival collection of the Federal Theatre placed on deposit at George Mason by the Library of Congress in 1974.

The Center for the Improvement of Productivity

Established in the Fall of 1983, the Center's primary mission is to assist both the public and private sector in planning, implementing, and evaluating alternative strategies for productivity improvement. This goal is served through applied research and development contracts, training seminars, workshops and conferences, management briefings, and, eventually, graduate-level courses at the University. The Center draws primarily upon the GMU faculty as project staff members. Outside technical specialists and consultants are brought in when needed. Specific competencies are heavily represented in the disciplines associated with group behavior and dynamics, human factors research, socio-technical system design, and management development. Work of the staff is supplemented and supported by University specialists in computer technology, telecommunications, and graphics, as well as graduate students.

The Center for the Study of Market Processes

The Center, located in the Department of Economics, was established in 1981 to promote education and research in Austrian economics and related challenges to economic orthodoxy. Today, the Center directs the Austrian Economics Program, as well as a number of scholarly activities, including a weekly Austrian economics colloquium that allows students and faculty to discuss ideas on a more informal basis; a guest-lecture series that brings distinguished economists to campus; week-long educational conferences and one-day policy-oriented seminars; and a publications program that includes the Center's scholarly newsletter, Market Process. The Center also offers scholarships to assist students in the Austrian Economics Program.

The Center for Study of Public Choice

The Center for Study of Public Choice includes scholars (seven full-time faculty members in Economics, plus associated graduate students and visiting scholars), whose primary research interest is the interaction of two disciplines: economics and political science or, more broadly, the institutional structure of the political economy. Public Choice applies economic methodology of individual choice to an understanding of the institutions of government and politics. In addition to the seven full-time positions, the Center also provides a research base for visiting scholars from all over the world. These visiting scholars not only represent many different countries, but many different academic disciplines as well. Typically, there will be economists, philosophers, political scientists, and sociologists numbered among Center visitors. Among the Center's ongoing activities is a professional journal, Public Choice; a weekly seminar series; an annual Liberty Fund Series Conference; and an annual outreach program for young scholars.

George Mason Institute

The George Mason Institute (GMI) was established to develop a partnership in science and technology between industry and the public sector. The Institute was designed to develop the University as a center of excellence while contributing to the social, economic, and technological growth of industry and the community.

Science and technology involves the broadest possible definition, including physical sciences, natural sciences, social sciences, and management sciences.

The University emphasizes the development of centers of excellence that are of maximum interest to industry and the government. Typical areas are computer science, computer and electronic engineering, decision science, environmental biology, finance, and economics.

The University provides a faculty liaison person as a point of contact for each GMI corporate member. The programs of the Institute emphasize instruction,
research, professional exchange, and professional services. There is also an industrial liaison program.

The Northern Virginia Writing Project

Established in 1978 as an offshoot of the Bay Area Writing Project, the Northern Virginia Writing Project (NVWP) works cooperatively with George Mason University, Northern Virginia Community College, and the public and private schools of Northern Virginia to improve the quality of writing and writing instruction. During a five-week NVWP Summer Institute, 25 selected teachers of writing from the Northern Virginia area meet to examine problems and approaches involved in the teaching of writing. Upon successful completion of the Institute, the teachers become Teacher/Consultants of the NVWP and are prepared to serve as teacher/leaders in their own schools and as consultants for school district in-service programs.

The George Mason University Faculty Writing Project (FWP), a branch of the NVWP, works with University teachers from many disciplines to improve writing instruction for students across the curriculum. A five-week Summer Institute trains these faculty members as Teacher/Consultants who conduct workshops for colleagues. The FWP also publishes a newsletter of successful teaching practices for all George Mason faculty.

The Writing Research Center, the newest program of the NVWP, supports the work of teachers at all levels from throughout the state who study the writing practices of their students. The Center’s goals, the same as those of all other NVWP programs, are improved instruction and increased knowledge of the writing process.

Schools, colleges, and universities wishing to improve writing instruction through in-service workshops and conferences can arrange for the NVWP to design and coordinate special training programs for their faculties. The NVWP is directed by Donald R. Gallehr, Department of English.

The Center for Interactive Educational Technology

The Center for Interactive Educational Technology, housed in the Education Department, features a blend of the old and the new in instructional resources. The Center has a microcomputer laboratory and will soon add a center for the study of videodiscs and robotics. Students are able to evaluate current instructional software or develop their own for particular subjects or classes. An audiovisual production laboratory is available to those interested in more traditional approaches, as well as a K-12 curriculum center that houses both print and non-print materials. The Center for Interactive Educational Technology provides an excellent vehicle for student and faculty instruction and research.

The Educational Child/Youth Study Center

The Center offers diagnostic and tutorial services to students in public and private schools in Northern Virginia and offers career counseling to adolescents and adults in the area. It serves as a training facility for graduate students in Guidance and Counseling, Reading, and Special Education.

Center for Bilingual/Multicultural Teacher Preparation.

This Center offers a program that prepares bilingual teachers and English as a second language for service in multicultural and linguistically diverse classroom settings. Interested students should contact the Bilingual/Multicultural Center in the Education Department.

The Psychological Clinic.

This clinic permits graduate psychology students to gain practical experience in the assessment of emotional, behavioral, and learning disorders in children and adolescents, and in the assessment of emotional and vocational problems of adults. Interviewing and testing are done by graduate students under the supervision of a staff clinical or counseling psychologist.

Federal Facilities.

Many federal laboratories and related facilities—such as the National Institutes of Health, the National Bureau of Standards, the Naval Research Laboratories, the NASA-Goddard Space Flight Center, and the Smithsonian Institution—enhance the educational environment for graduate students.

Northern Virginia Cooperative Graduate Engineering Program

George Mason University acts as the "host" institution of the Northern Virginia Cooperative Graduate Engineering Program through which Graduate Engineering and Information Technology Degree Programs are offered by George Mason University, the University of Virginia, and Virginia Tech. The Northern Virginia Program is part of a statewide effort initiated in Fall 1983 in the
Richmond Area. In 1984 the program was extended to Northern Virginia and the Tidewater communities. Students may apply to degree programs in more than 20 graduate engineering and information technology disciplines or may take courses on a nondegree basis. Extended classrooms are being established in Northern Virginia so that students may receive course work at their place of employment or at a site convenient to their employment. Televised courses are transmitted from U.Va. and VPI to interactive classrooms through the Public Television Stations. For more information, refer to the section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Metro Campus Professional and Conference Center

The University’s Professional Center is located in Arlington at the Metro Campus, 3401 North Fairfax Drive, near the Virginia Square station of the Metro Orange Line. On the third floor of the Metro Campus, the Professional Center offers a broad selection of undergraduate and graduate courses.

Most graduate courses offered at the Professional Center are prerequisites for advanced graduate degrees in Business Administration and Public Administration, but each semester a variety of undergraduate courses are also offered. In addition, several master’s programs, including those in economics and human resource management, will be offered through the Professional Center in the Fall 1985 semester. Graduate courses will also be regularly scheduled for the following programs: Accounting, Business Administration, Engineering and Information Technology, and Information for Resource Management. Professional Center courses are scheduled in three-hour megablocks from 9 a.m. to 9 p.m. weekdays.

In addition to classrooms, the third floor of the Campus incorporates the University’s Conference Center. A large area, seating 300, is used for University and community programs and for business and professional conferences.

The University Information Center on the Kirkwood Street side of the building provides information concerning all University programs and activities, including those at the Fairfax campus.

Schedules of offerings at the Professional and Conference Center are available at the Information Center, which also stocks University catalogs and other brochures. The Information Center telephone number is (703) 841-2604 and the mailing address is 3401 North Fairfax Drive, Arlington, Virginia 22201.

George Mason University Press

Under the guidance and administration of the Graduate School, the George Mason University Press came into existence in April 1983, by the signing of a memorandum of agreement with Associated University Presses. The GMU Press makes a specific contribution in fulfilling the overall mission of the University. That mission is to create and disseminate knowledge through teaching, research, and publishing. Whether in the form of books, monographs, research reports, conference proceedings, or symposia, a university press publishes works of scholarship judged worthwhile by other scholars and approved by a publications committee of the university faculty. George Mason University Press solicits manuscripts in all areas of general scholarship and seeks to promote communication between its faculty and scholars at other universities.
University Offices and Information

Affirmative Action

The primary objective of the Office of Equal Employment Opportunity/Affirmative Action is to ensure compliance throughout the University with the institution’s policy of nondiscrimination in employment on the basis of race, color, religion, national origin, sex, or age (except when sex or age is a bona fide occupational qualification); to foster and monitor affirmative action in employment on behalf of target groups; to investigate and make recommendations for resolution of grievances in which discrimination on the basis of membership in a target group is alleged. The office’s overall objective is total equal employment opportunity for all present and potential George Mason University employees.

The office takes affirmative steps to increase the representation of all qualified minority groups in order to promote a more diverse and ethnically heterogeneous faculty and staff. Their office is located in 205 Finley (323-2519).

Care and concern are given to this process to ensure that while the employment of qualified minority and female persons is strongly and continuously encouraged, the opportunity for employment or terms and conditions of present employees are maintained equally.

Minority Student Services

Minority Student Services is an administrative office that provides coordination for the University, with respect to its planning and programming, for ethnic minority students. The office coordinates those student services that are actually housed within their respective administrative units and assists the general University by providing continuity to services for minority students. Assisting students to understand their academic needs and then to find the appropriate way to meet them, is an important function of the office. Minority Student Services is located in Room 352 of Student Union I (323-2383).

Consortium Membership

George Mason University is the host institution of the Consortium for Continuing Higher Education in Northern Virginia. The other members are Marymount College of Virginia, Northern Virginia Community College, the University of Virginia, Strayer College, and Virginia Polytechnic Institute and State University. The Consortium’s primary goal is to foster interinstitutional cooperation while broadening the base of learning opportunities for adult students. Specific information is available in the Guide to Higher Education for Adults in Northern Virginia, distributed by the Division of Continuing Education, George Mason University, 4400 University Drive, Fairfax, Virginia 22030.

Office of Alumni Relations

George Mason University Alumni Association. The Office of Alumni Relations has the primary responsibility for initiating and coordinating alumni activities and programs in conjunction with the GMU Alumni Association.

The office, located at 4520 Roberts Road at the Main Campus, is open Monday through Friday from 8:30 a.m. until 5 p.m. The director encourages inquiries on all aspects of alumni relations. The office is interested in serving the needs of the alumni and invites alumni participation in programs supporting the GMU community.

The Office of Alumni Relations maintains address and biographical information on approximately 18,000 graduates. In addition, it assists in the publication of a quarterly University/Alumni magazine, which focuses on alumni achievement; academic programs; social opportunities; and special on-campus events and Alumni Association activities such as reunions, homecomings, awards banquets, and receptions. The office also coordinates the efforts of those alumni who volunteer to assist University offices: Admissions, Career Services, Public Relations, and Development.

Many alumni invest time, effort, and money in the University. The Alumni Association provides a variety of opportunities for service and support by alumni who want to assist George Mason University in becoming a stronger and more dynamic institution. The Alumni Association is organized under a Board of Directors, which includes representation from various chapters, academic areas, and special interest groups. Some members of the Board are elected as at-large delegates. The Board concentrates on developing a stronger relationship between the University and the alumni body. This relationship is manifested through alumni/student scholarships and library funds, along with other benefits to alumni, the local community, and the University.

Both the staff of the Office of Alumni Relations and the volunteers from the Alumni Association participate in the advancement program of GMU through the University Development Office.
Alumni Association Officers for the period 1984 to 1986:

President: Jay R. Goldman, J.D., Law, '80

President-Elect: Ned C. Storey, B.S., Business Administration, '80

Vice President: V. Lee Strang, Jr., B.S. Government, Politics, '83

Secretary: Carol Nicholson, B.S., Business Administration, '79

Treasurer: Charles H. Nance, J.D., Law, '82

Public Relations Services

Public Relations Services, located in Room 214 of the Finley Building, handles press and publicity for the University and produces a quarterly university magazine featuring articles about the University and its people. This is distributed to students, faculty, staff, alumni, and the community. The office also publishes The George Mason Gazette, an internal biweekly newsletter covering items of general interest to University faculty and staff and maintains an electronic version of the Gazette on computer. Frankly Speaking, a weekly public service radio show, is also produced by this office.

Design and Publications

Design and Publications is responsible for the layout, design, and printing of University publications. The department consults daily with University faculty and staff on producing the visual image for the University, which is displayed through brochures, catalogs, class schedules, posters, newsletters, and other printed items. Guidelines for the visual image are contained in the Visual Standards Manual.

Motor Vehicles Policy

The privilege of operating and parking a motor-driven vehicle at George Mason University is extended to all students, subject to the following procedures:

Vehicles must be registered with the Traffic and Parking Office. At the time of registration operators must certify that (a) vehicles have a valid state registration and valid insurance from a recognized insurance company, evidencing coverage for public liability in conformance with the laws of the Commonwealth of Virginia; (b) they have a valid state driver’s license; and (c) they understand that they are governed by University Motor Vehicle and Traffic Rules and Regulations, a copy of which is furnished at the time of registration of the vehicle. Vehicular Registration Decals may be purchased for the full Academic Year or by the semester/summer session.

The Traffic and Parking Office is located at the rear of the West Building, in T-102.

Fees are as follows:
$30 Full Academic Year, September 1 through August 31 ($10 for a second vehicle).
$20 Semester, Fall or Spring ($10 for a second vehicle).
$10 Summer Session ($5 for a second vehicle).
$10 Motorbikes, Full Year.
$5 Motorbikes, Summer Session.

Registered vehicles must display in full view the University’s vehicular registration decal, affixed immediately upon issue as per instructions on reverse side of decal.
Student Affairs
Student Unions

Most nonacademic activities and services at the University take place or are housed in Student Union I and Student Union II. The coordinators of these services are located in Student Union I. They include the Offices of the Vice President for Student Affairs, the Associate Vice President for Student Services, the Director of Student Unions, the Adviser for Students with Disabilities, and the Director of Minority Student Services; the Offices of Student Health Services, Housing Services, Career Services, Cooperative Education, Veterans Affairs, Financial Aid, the Counseling Center, the Campus Ministry, and the Academic Advising Center. The Offices of Student Government, Student Organizations, Student Publications, and the Honor Committee are also located in Student Union I.

Recreational facilities and lounge areas occupy a portion of the Unions. In addition to an arts and crafts center, there are game, television, and music rooms. Banking services are available on the second floor of Student Union I. The bookstore is located in Student Union II.

Contract food services are available on all of the University’s campuses. On the Main Campus, the lower level of Student Union I houses a cafeteria, and a rathskeller. Student Union II has a large cash cafeteria and a separate cafeteria for students on the meal plan. Vending machines are also located in various buildings. The Food Service Manager on the Main Campus can provide information concerning catering.

The Student Unions also have a variety of meeting facilities. Students may schedule meetings or conferences in the Student Union (or throughout the University) by contacting the Scheduling Clerk in Room 315 of Student Union II (323-2164).

Performing Arts Activities

George Mason offers students the opportunity to participate in many arts events throughout the school year. The George Mason University Dance Company presents two annual concerts and all students are encouraged to audition. Guest choreographers and performers are also an integral part of the dance program.

Theatre events include four major productions, as well as several student–directed, one–act, and experimental plays. Students may also attend playwriting classes and work with theatre majors on presentations of their own works. Auditions for theatre events are open to all George Mason students and are held each semester. Students interested in technical theatre can work in a variety of production crews, including light and sound, costumes, and publicity. Information concerning auditions, crew work, and performance dates may be obtained from the Department of Performing Arts (425–3900).

Students interested in music may audition to perform in the following: University Chorale, Gloriana Singers, Symphonic Chorus, Chamber Orchestra, Symphonic Winds, Jazz Ensemble, and various chamber ensembles. All members of the University community are invited to attend concerts and recitals given by the Department of Performing Arts.

Student Organizations

Approximately 115 on-campus student organizations provide opportunities for students to exercise and develop their talents and complement the University’s curricular programs. The organizations span a wide range of interests, including politics, forensics, drama, music, journalism, science, service, recreation, business, social life, religion and fellowship. Membership in student organizations is open to any registered George Mason University student and can open vistas to new friendships, informal contact with faculty and staff learning opportunities, and leadership experience.

All recognized student organizations are members of the Student Government’s Inter-Club Council (ICC). Council membership facilitates coordinated
Student Services

Development of campus activities and interaction with other student organizations. It also provides a University mailing address, access to file and storage space and duplicating services, and a channel of communication with the University administration regarding support services for student organizations.

George Mason now includes six fraternities, five national sororities, and one local sorority. They contribute to campus life by sponsoring numerous social and service activities throughout the year. These organizations encourage their members to achieve high academic standards while participating in social and service activities within and around the University community. To obtain additional information on fraternity or sorority life at George Mason, contact either the Inter-Fraternity Council or the National Panhellenic Council. Both can be reached through the Student Activities Office, 305 Student Union I (323-2574).

The Student Activities Office also maintains updated information on names and phone numbers of contact persons in each organization. The Student Organization Manual, a “how-to” resource handbook for student leaders can be found there. The office staff also consults with students or student organizations that are planning programs for students; assists new clubs in attracting members and receiving recognition; and offers leadership training through workshops, retreats, and credit course formats to organization members and to students not affiliated with a club.

Student Health Service

Personnel in the Student Health Service treat minor illnesses, administer first aid, and dispense nonprescription medications. They also provide referral services to outside health resources, offer information and counseling on matters of hygiene, and assist in the administration of a program of health and accident insurance and a student dental plan. Pregnancy tests, throat cultures, and mono spot tests are performed for a minimal fee. Abortion counseling and referrals are also offered.

During the academic year, the health service emphasizes preventive health care. Programs in 1983-84 included blood pressure checks, Pap testing, and Cardio-Pulmonary Resuscitation.

Staffing consists of a Nurse/Coordinator, two part-time nurses, and a consulting physician. The Student Health Service is located on the Main Campus in Student Union I, Room 355 (323-2584).

Health Insurance and Dental Plan

All students of George Mason University are eligible, on a voluntary basis, to enroll in the University-endorsed Accident and Sickness Health Insurance Plan and the University-sponsored dental plan made available through DENTICARE of Virginia.

The health insurance policy includes provisions for major medical coverage, out-patient laboratory fees and x-ray coverage, as well as the usual provisions for hospital room and board and surgical expenses. At minimal cost this policy covers the insured student 12 months per year, 24 hours per day, worldwide, at the University or elsewhere.

For a minimal fee per year, the dental plan provides x-rays, teeth cleaning, and office visits at no charge and various dental procedures such as fillings, crown and bridgework, and root canal therapy at reduced costs.

Health insurance brochures, enrollment applications, and claim forms, as well as dental plan information, may be obtained at the Student Health Service, Student Union I, Room 355 (323-2584).

Services to Disabled Persons

A wide range of services and assistance is available to students with disabilities. Students may contact the Adviser to Students with Disabilities at 323-2523 (Voice/TTY) for more information.
Housing
The University currently offers on-campus housing for 1,150 students. With completion of seven new dormitory-style facilities the number of on-campus spaces will increase to 1,650. The two new residence halls house 500 residents in double occupancy rooms. Between every two rooms is a private bath that serves up to four people. The rooms are provided with mirrored wardrobes, chests of drawers, desks with study carrels, study chairs, beds, carpeted floors and draperies. Each floor has a study lounge. The first-floor level includes a main lounge, two meeting rooms, laundry and vending facilities, and a hall office.

The student apartment complex consists of nine three-story buildings that contain 121 apartments. It provides housing for 500 residents. The apartments are divided into one-, two-, and three-bedroom units that accommodate two, four, or six students, respectively. Each apartment has its own entrance from the outside, and includes a kitchenette, a bathroom, and a carpeted living room, in addition to the bedroom(s). Utilities, except telephone service, are included in the rent.

The Patriot Village Complex consists of 15 buildings housing 150 residents. Each building has five bedrooms accommodating two students per room. Bedrooms are provided with single beds, desks, study chairs, and sliding door closets. All rooms are carpeted and draperies are provided. Each building is provided with individually controlled heat and air conditioning. The buildings also have two bathrooms, individual study and lounge areas, and laundry facilities.

An additional 500-bed housing complex is currently under construction, with the estimated date of completion January 1986.

Complete information about the University's on-campus housing is available from the Director of Housing and Resident Life, George Mason University, 4400 University Drive, Fairfax, Virginia 22030. (323-2354/55).

Off Campus. For assistance with off-campus housing, students may contact the Housing Office.

Counseling Center
The Counseling Center provides services that enable students to successfully achieve their educational goals. Coping skills, self-assessment and decision-making skills, learning and study skills are provided to students through individual counseling and workshops. Counseling Center staff are available to give personal attention to all University students who are having difficulty in school or who would like to improve their performance.

The Center is staffed by qualified professional counselors and psychologists. Services are available at no charge to all University students. Center offices are located at 364 Student Union I, and are open Monday through Friday from 8:30 a.m. to 5 p.m. Evening hours are available on Tuesday and Wednesday until 8 p.m. For information about services or to make an appointment call 323-2165.

Individual Counseling. Services include counseling for personal adjustment and emotional concerns; managing personal crises; educational decision-making; reading and study skills improvement; and concerns about relationships. Interest, personality, and intelligence tests are offered as a means of increasing self-understanding. Consultation with faculty, staff, and students is also available to individuals or organizations requesting services.

Group Counseling. The Group Program offered by the Counseling Center provides skills to support and enhance the student's educational progress. Workshops are available in the following skill areas:

1. Learning Skills
   Academic Success
   Speech Anxiety
   Study Skills Improvement

2. Self-Assessment Skills for Educational Decision Making
   Choosing/Changing Majors
   Career Development for Black Students

3. Personal Development Skills
   Assertiveness Training
   Personal Growth
   Relationships
   Stress Management
   Self-Esteem

Brochures listing these services are available each semester in the Counseling Center and on bulletin boards throughout the campus. Descriptions of services are published in the class schedule and student newspaper.

Learning Skills. The Counseling Center provides a wide variety of services through its Learning Skills program to students seeking academic success. Services include learning style assessment and study
skill improvement. Tutorial assistance is also available to aid students who have difficulty in a particular subject area. Professional staff and trained peer counselors offer both individual and group study skills help on the following topics: Study Methods and Strategies, Scheduling and Time Management, Exam Strategies, Note-taking and Text Marking, Motivation and Concentration Improvement, Goal Setting, Reducing Exam Anxiety, Reducing Math Anxiety, Increasing Vocabulary and Writing a Research Paper. Located in Room 350, Student Union I (323-2018). For tutorial assistance call 323-2018.

Re-Entry Student Program. The Re-Entry Student Program offers groups, workshops, presentations, and peer counseling especially designed for the student returning to higher education. Most activities take place at the Re-Entry Student Exchange, a drop-in service and place to exchange information, concerns, and support. Located in Room 236, Student Union I (323-2940).

Black Peer Counseling. Black undergraduate students provide information and peer support to other black students and offer services to the broader University community. The program includes a drop-in service, structured workshops, information exchange, referral services, and academic and social skill development services. Located in Room 235, Student Union I (323–2940).

Training. The Counseling Center provides training and supervision to undergraduate and graduate students who are interested in serving as peer counselors in the Counseling Center programs. Placements are also provided to graduate level practicum students and doctoral interns. Practicum and intern students provide the full range of counseling services under the supervision of professional staff members.

Peer counselors serve in the following programs: (1) Learning Skills; (2) Re-Entry Student Counseling; and (3) Black Peer Counseling. Students are trained in helping skills, are taught the content material necessary for the service in which they work, and are provided with supervision to enhance the learning support process.

Referral. Referral information is available to students, faculty, and staff interested in seeking assistance from other mental health professionals and agencies.

Career Services

The Office of Career Services provides career counseling, career information, experiential learning, and job placement to students and alumni. The office, located in Room 348 in Student Union I, is open Monday through Friday from 8:30 a.m. until 5 p.m. and on Tuesday and Wednesday evenings. For information call 323-2476. The following major services are offered:

Career Counseling. Through individual counseling and workshops, students embark on a career decision-making process. This process encompasses students' needs, interests, values, abilities, and skills. The counseling explores a range of occupations before a student chooses a career plan. The plan is then implemented with a set goal and both are reevaluated periodically.

Career Seminars and Workshops. These include Career Identification, Choosing/Changing Majors, Mid-Life Career Planning, Applying to Graduate/Professional School, Job Hunting Strategies, Resume Writing, and Interviewing Skills. Check the Career Services' brochure for the listing of workshop days and times. Evening programs are available.

Career Reference Library. This specialized library contains information on career fields and undergraduate majors, graduate and professional school catalogs, government employment information, and job directories. Along with many other self-directed activities, a computerized career guidance program is available to assist in career exploration.

Cooperative Education. Cooperative Education is a program that provides qualified students with professional-level, progressively responsible, paid work experience in positions related to their majors. Two calendar plans are available: the preferred traditional plan, in which students alternate periods of full-time work with periods of full-time study, and the parallel plan, in which students attend school full-time and work part-time. Positions are open to both undergraduate and graduate students in all disciplines. Participation is recognized by the University through notation of the work assignments on academic transcripts. Orientation sessions are scheduled weekly to provide more complete information.

Internships. Career Services acts as a clearinghouse for information on internship opportunities. Internships can provide students with project-oriented experiences relevant to their academic and
career interests. Students may be referred to internship options in specific academic departments or to general internship information in the Career Reference Library.

Part-Time/Summer Jobs. Job notices are posted on bulletin boards directly outside the Office of Career Services. Students seeking career-related, part-time or summer employment may register in Room 348, Student Union I.

On-Campus Interviews. During the Fall and Spring semesters, employers conduct interviews on campus for full-time career positions with their organizations. Graduating students and alumni can participate by first attending an orientation session, completing a registration form, and submitting it with a copy of their resume to the Office of Career Services. A schedule of employers is available at the beginning of each semester.

Job Leads. Graduating students and alumni can register to receive weekly bulletins of full-time job vacancies. Job notices are also filed in the CareerReference Library and posted on a job bulletin board.

Credential File. Graduating students and alumni may establish credential files containing references, resumes, and course listings to be furnished to prospective employers and graduate schools at the request of the student.

Veterans Affairs

The Veterans Coordinator in the University's Office of Veterans Affairs assists veterans, service personnel, dependents, and survivors in obtaining authorized educational benefits. The office helps veterans adjust to University life. Located in Student Union I, the office is open Monday through Friday from 8:30 a.m. to 5 p.m., and two days a week until 7 p.m. during regular semesters. (Late days vary. Check with the office at 323-2381.) For further information on benefits, see Veterans Affairs section in Financial Information chapter.

Office of International Programs and Services

The overall goal of the Office of International Programs and Services is to provide an international dimension to the campus. The office is responsible for a number of activities and services that are provided to all segments of the population, including international students, American students, faculty, and staff. These services include:

1. Evaluating applications of prospective students with overseas credentials

2. Administering the George Mason University English Language Institute, which provides an intensive program for those students who need to improve their English Language proficiency before they start academic work

3. Advising and counselling international students and scholars on such matters as admissions, transfer of credit, immigration issues, English proficiency, special orientation, housing, and personal as well as financial problems

4. Organizing activities for the international students and scholars to integrate them into the life and academic process of the Institute and the surrounding community

5. Presenting a broad range of intercultural events on campus, such as International Week, United Nations Day, Ethnic Days, Great Decisions, International Coffee Hours, film, and lecture series

6. Providing advice to American students and faculty members who wish to broaden their knowledge of other cultures through research, study, and travel abroad

7. Maintaining relations with the U.S. Immigration and Naturalization Service, with embassies and with the State Department, as well as with governmental agencies dealing with international student exchange programs

8. Assisting in the establishment of exchange programs with overseas universities for students and faculty members

9. Facilitating the establishment of short-term and long-term nondegree training programs for overseas students with the appropriate departments

10. Assisting and encouraging special faculty interest groups such as the Canadian Interest Group and the International Development Group

11. Encouraging and supporting the development of an international dimension to the teaching, research, and service functions of the faculty.

English Language Institute

International students who wish to enroll in the English Language Institute, either full-time or part-time, must have completed the equivalent of a U.S.
high school education (12 years of school), or be at least 17 years old at the time of enrollment. Students should send an official, certified, and translated copy of high school and/or university transcripts and a notarized statement of financial support along with the completed application form and deposit. Students applying for admission to the English Language Institute do not need to take the Test of English as a Foreign Language (TOEFL) but are encouraged to do so if they plan to apply for admission to George Mason University or other universities soon after attending the English Language Institute. Some exceptionally advanced students may be allowed to take one or two academic courses while they are attending the institute. Students who are accepted are sent a formal letter of acceptance and a Certificate of Eligibility (Form I-20) for a student visa if one is required. Government-sponsored students will be issued an IAP-66 form. Admission to courses in the English Language Institute does not imply automatic eligibility for admission to any program or course of study at George Mason University.

Information may be requested by writing or calling: English Language Institute, George Mason University, 4400 University Drive, Fairfax, Virginia 22030, U.S.A. (703) 323-2001.

Conduct

The University respects and protects the individual dignity, integrity, and reputation of its students. Students are required to comply with those conventions and regulations of University life that are necessary to maintain order, protect individuals and property, and fulfill the purposes and responsibilities of a University.

Students enrolling in the University assume an obligation to conduct themselves in a manner compatible with the University's function as an educational institution. The Code of Virginia (Section 23-9:2) confers upon the University the responsibility for maintaining order within the University and the right to exclude those who are disruptive.

The Office of the Associate Vice President for Student Services is administratively responsible for supervising student conduct on campus. A system of courts administers nonacademic discipline. In addition to these courts, the student Honor Committee, described below, is responsible for adjudicating violations of the Honor Code that relate to academic matters. Questions regarding student conduct should be directed to the Office of the Associate Vice President for Student Services, located in Room 310 of Student Union I (323-2522).

Honor System and Code

George Mason University shares in the tradition of an Honor System that has existed in Virginia since 1842. The Honor Code is an integral part of University life. In the spirit of the code, a student’s word is a declaration of good faith acceptable as truth in all academic matters. Any violation of a student’s word is an offense against the Honor Code. Therefore, lying, cheating, plagiarism, and stealing constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report alleged violations of the Honor Code to the Honor Committee.

The Honor Committee is independent of the Student Government and the University administration. It is made up of students elected by the student body and has the primary duty of espousing the values of the Honor Code. Its other function is to sit as a hearing committee on all alleged violations of the code.

At the beginning of each semester faculty members have the responsibility of explaining to their classes their own as well as the departmental policy

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Financial Information

Tuition and Fees

To undertake any form of academic study with George Mason University, an individual must be registered as a student and must pay the prescribed charges. Registration is not allowed if there are outstanding financial obligations.

The in-state tuition rate applies only to students formally classified by the University as Virginia students. New students are required to complete the Virginia Domicile Classification Form (available in the Office of Admissions) and submit it with the Enrollment Request Form. Returning students previously classified as out-of-state should also complete the form if they wish to request a change of classification.

Tuition and fees for early-registered students are due and payable at the Cashier's office on or before August 6, 1985, and December 12, 1985. Failure to receive a bill does not waive the requirement for payment when due.

All other students must pay during the registration process, including those students registering during the ADD period. Failure to make payment at the Cashier's office on the day of registration or adding a course during the ADD period results in a late charge of $10. Students who register and then cancel/withdraw prior to the beginning of classes or during the first week of classes are charged a $20 administrative fee.
In-State

Tuition and Fees, full-time (12 semester hours)

Tuition and fees, part-time (11 semester hours or less) per semester

Laboratory Breakage

Deposit

Graduation Fee

Special Registration Fee

Private Instruction (music)

Out-of-State

How To Figure Semester Tuition and Fees Costs

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Tuition and Fees (per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$69</td>
</tr>
<tr>
<td>2</td>
<td>138</td>
</tr>
<tr>
<td>3</td>
<td>207</td>
</tr>
<tr>
<td>4</td>
<td>276</td>
</tr>
<tr>
<td>5</td>
<td>345</td>
</tr>
<tr>
<td>6</td>
<td>414</td>
</tr>
<tr>
<td>7</td>
<td>483</td>
</tr>
<tr>
<td>8</td>
<td>552</td>
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<td>9</td>
<td>621</td>
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<tr>
<td>10</td>
<td>690</td>
</tr>
<tr>
<td>11</td>
<td>759</td>
</tr>
<tr>
<td>12-17</td>
<td>828</td>
</tr>
</tbody>
</table>

For each additional hour over 17, add $69 for In-State and $135 for Out-of-State.

Deferred Payment Plan

A deferred payment plan is available for students whose tuition and fees for the semester exceed $325. There is a $10 administrative fee for this service. Students must pay at least one-third or $325 (whichever is greater) of the tuition and fees as the initial payment, with the remaining tuition and fees payable in two equal payments. Students using the deferred payment plan must come to the Cashier's office to make the initial payment and sign a deferred payment contract. Bills for installment payments are not prepared. Students are responsible for ensuring payment of installments on or before the due dates published. Contracts are not mailed to students.

A deferred payment plan is also available for students who live in on-campus housing or use a meal plan. There is a $10 administrative fee for this service. Students must pay 50 percent of the rental and/or board charge as the initial payment, with the remaining amount payable in two equal installments. Students using the deferred payment plan must come to the Cashier's office to make the initial payment and sign a deferred payment contract. Bills for installment payments are not prepared. Students are responsible for ensuring payment of installments on or before the due dates. Contracts are not mailed to students.

Failure to make tuition and fees payment on or before the due date results in a late charge of $10.

1For each additional hour over 17, add $69 for in-state and $135 for out-of-state.

2Chemistry only. Same laboratory card may be used for both semesters.

3See Application for Degree.

4$140 for 14 one-half hour lessons; $280 for 14 one-hour lessons. Fee is nonrefundable after 60 calendar days. Refund prior to completion of 30 days is $100 ($200 if taking one-hour lessons); between 31 and 60 days, a refund is $60 ($120 if taking one-hour lessons). Students are billed for private music instruction after the semester begins.
Likewise, failure to make rental or board payment on or before the due date results in a late charge of $10. Due Dates for Deferred Payments. (Tuition and Fees and Rental or Board). First Semester: Second and third payments due September 10 and October 10, 1985. Second Semester: Second and third payments due February 6 and March 6, 1986. Payments must be received in the Cashier’s office on or before the due date.

Checks
Checks in payment of tuition, fees, fines, or other obligations to the University should be made payable to George Mason University. Second-party checks are not acceptable.

A check returned to the University by a bank results in a $10 penalty fee for the payor. Further, students who fail to make good such checks within five calendar days following notification by the business office are placed on financial suspension without further notice.

Failure to Meet Financial Obligations
Students failing to meet a financial obligation to the University are placed on financial suspension. In addition, failure to meet financial obligations to the University may result in placement of the delinquent account with a collection agency, withholding from subsequent tax returns and other collection procedures as mandated by the Commonwealth. The student is responsible for any costs incurred in the collection of delinquent accounts. Fines owed to libraries of institutions and participating public libraries of the Consortium of Continuing Higher Education in Northern Virginia similarly affect students’ status.

Reinstatement Fee. Students placed on financial suspension because of outstanding obligations in excess of $50 are not permitted to register in subsequent semesters until all outstanding obligations—including late charges plus a $25 reinstatement fee—have been paid.

Financial Suspension
All academic credit is withheld for students on financial suspension. This means that no transcripts of record are issued, no diplomas are released, and no registrations for a subsequent semester or term are permitted until outstanding obligations, including the reinstatement fee (if necessary), have been paid in full. In those instances where the outstanding financial obligation that caused the financial suspension is in excess of $50 dollars, a reinstatement fee of $25 is also imposed.

Refunds
If students cancel registration before the beginning of the semester or withdraw during the first week of classes, their tuition and fees, less an administrative charge of $20, are refunded. Assessed penalties are nonrefundable.

Tuition and fees are refunded on a graduated scale for subsequent voluntary drops and withdrawals during the second and third weeks of classes. The calculation of the amount of refund is based on the date of the drop or withdrawal form as certified by the Registrar. Hours dropped after the third week of classes must be paid for in full. The refund scale is shown below and is posted on the bulletin board at the Cashier’s office. It is the student’s responsibility to be familiar with the refund scale; also, the refund process is initiated by the student who submits a request to the Cashier’s office.

Refund Scale (Per Hour)

<table>
<thead>
<tr>
<th>Week</th>
<th>In-State</th>
<th>Out-of-State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 (100%)</td>
<td>$69</td>
<td>$135</td>
</tr>
<tr>
<td>Week 2 (66.7%)</td>
<td>$46</td>
<td>$90</td>
</tr>
<tr>
<td>Week 3 (33.3%)</td>
<td>$23</td>
<td>$50</td>
</tr>
</tbody>
</table>

Off-Campus Courses
Students enrolling in off-campus courses are assessed tuition and fees at the same rates as those established for on-campus courses.

Other Required Fees

Transcript Fee. A fee of $2 is charged for the first copy of each transcript of record requested by students, and $1 for each additional copy ordered at the same time. Payment must accompany the request.

Motor Vehicle Registration Fees. Students who park their vehicles on University property must register them with the University’s Traffic and Parking Office and pay a $30 fee for a parking decal. (See Regulations on Motor Vehicles.)

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Eligibility for In-State Tuition

To be eligible for in-state tuition charges, a person must have been domiciled in Virginia for a period of at least one year prior to the semester for which a reduced rate is sought. A person becomes domiciled in Virginia when legally capable of establishing a domicile and present in Virginia with the unqualified intention of remaining in the state permanently. Domicile, however, is primarily a question of intent and the burden of proof of domicile is upon the student seeking the benefit of reduced tuition.

Penalties

A student who provides false information or refuses or conceals information for the purpose of achieving in-state status, or who fails to notify the University of a change of facts which might affect reclassification from in-state to out-of-state status, shall be required to pay retroactively any tuition fees that would normally have been charged and shall be subject to appropriate disciplinary action.

Financial Assistance

Office of Financial Aid

The Office of Financial Aid provides a variety of services to help students finance their education. These services include financial counseling, referral and information resources, and financial assistance. Student financial assistance consists of grants, loans, and employment. Awards are based on financial need. Located in Student Union I, Room 354, the office is open Monday through Friday from 9 a.m. until 5 p.m., and Tuesday until 7 p.m. For further information, call (703) 323-2176.

To apply for financial aid, each year new and currently enrolled students must obtain a copy of the George Mason University Financial Aid Application and return the completed form to the Financial Aid Office. In addition, students must complete a Financial Aid Form and forward it to the College Scholarship Service in Princeton, New Jersey, four weeks prior to the application deadline. The application deadlines for consideration of federal and most of the state funds are as follows:

1986–87 Academic Year
First Year Graduate Students
March 1, 1986
Returning Students
May 1, 1986
Summer 1986
April 1, 1986

Applications received after the deadline are evaluated according to the availability of funds.

The University administers federal, state, and other aid programs as outlined below.

Federal Programs

The National Direct Student Loan Program. Long-term, 5 percent interest loans from the federally-sponsored National Direct Student Loan Program are available to qualified students. Repayment begins six months after graduation and may be deferred for students entering graduate school, the Peace Corps, Vista, or military service, and three years for those temporarily disabled. Students must be enrolled at least half-time in order to qualify. Half-time is defined as six credit hours for both undergraduate and graduate students.

Federal Nursing Program. Loans from the Federal Nursing Loan Program are available to nursing students who show exceptional financial need.

Guaranteed Student Loan Program. Students with family incomes of $30,000 or less may borrow directly from lenders in order to finance educational expenses. Students with family incomes above $30,000 must demonstrate need in order to qualify.
While most of these loans are made by commercial lenders, some states are also lenders. The state lending institution for Virginia residents is the Virginia Education Loan Authority. The loan may amount to as much as $2,500 per year up to a maximum of $12,500 for an undergraduate student. The government pays the interest on the program, therefore, anyone may participate. Virginia Scholarships. These scholarships are for full-time Virginia residents who demonstrate financial eligibility and who have established a record of academic and personal achievement.

State Nursing Scholarships. The Bureau of Public Health Nursing provides limited scholarships to Virginia residents. These scholarships are based on need, and applications are made directly to the Bureau of Public Health Nursing and are available to graduates and undergraduates. The application deadline for students previously enrolled in a nursing program is March 1, and for new students entering a nursing program the deadline is June 1. Applications are available in the Financial Aid Office.

Graduate Assistance

Graduate School Fellowships. George Mason University annually awards a limited number of University fellowships that are funded by the Commonwealth of Virginia and can be awarded in any department. The awards, based on merit, are intended to encourage and assist superior students in pursuing graduate studies in the minimum time possible. All recipients must enroll in full-time study. For further information and an application, please contact the Graduate Dean’s Office, (703) 323-2124.

Applications, available in the Graduate School office, must be submitted to the Graduate School for major department review. Prospective graduate students must also have filed an application for admission to the Graduate School.

Other Fellowships. Direct fellowship awards are available from a number of foundations. Students may obtain information concerning these fellowships from the Graduate School.

Woodrow Wilson Foundation. The Woodrow Wilson Foundation provides funds for graduate fellowships to students planning college teaching careers in a liberal arts field. Although lack of funds curtailed grants in recent years, seniors interested in applying for such grants as they become available must be nominated by one of their professors in October. Consult the departmental adviser or the local Woodrow Wilson campus representative for further information.

Graduate Assistantships. The Graduate School offers a number of graduate teaching and research assistantships in departments with graduate programs. Assistantships are awarded on a non-need basis. A student holding an assistantship must be in degree status and must take a minimum of six semester hours of graduate credit each semester. Stipends ranged from $3,500 to $7,000 for the 1984-85 academic year. Application for a graduate assistantship should be made to the chair of the department involved. For further information and an application, please contact the Graduate Dean’s office, (703) 323-2124.

Virginia Graduate Scholarships. Graduate students classified as Virginia residents may receive a Graduate Scholarship to cover tuition and fees. They must be enrolled full time, be formally admitted to the Graduate School, maintain a 3.00 cumulative grade point average, and demonstrate financial need.

In-Service Training Program for Teachers. Candidates for graduate degrees may establish eligibility to receive state funds for graduate study closely related to their field of work through one of the State’s Division Superintendents of Schools. Candidates may use the funds to enroll at the University in previously approved courses.

Emergency Loan Program

Mary E. Ferguson Emergency Loan Program. Currently enrolled students may borrow funds for legitimate emergencies excluding tuition, fees,
books, and supplies. Emergency loans must be repaid within 45 days; overdue payment results in a late charge of $5 for each 45 days past due. Failure to repay the loan within 45 days, without requesting an extension for a reasonable excuse, will result in financial suspension. Students financially suspended for nonpayment of an emergency loan are ineligible for any future emergency loans.

**Veterans Affairs**

**Veterans Educational Benefits**

Students eligible for Veterans Educational Benefits while attending the University must contact the Office of Veterans Affairs. The following actions are required:

1. Veterans who have never received benefits must apply on Form 22-1990. The application should be turned in to the Veterans Office on campus with a certified copy of the student's DD-214. Active-duty personnel must use Form 22-1990a.

2. Students who have received benefits from another school or who are changing either their type of program or course objectives must fill out Form 22-1995—Request for Change of Program or Place of Training.

3. Students must request the veterans' counselor to send an enrollment certificate to the Veterans Administration Regional Office each school year (each semester, if the students are under half-time, on active duty, or in Continuing Education). Students must apply separately for a summer session. Students in Continuing Education will only be certified for two semesters.

4. Students themselves are responsible for notifying the Veterans Office on campus of any change in status. Such changes include:
   a. Adding or dropping courses
   b. Change in marital status
   c. Addition of a child
   d. Change of address (notify VARO immediately)
   e. Withdrawal from school (notify immediately).

Forms for making these changes are available at the Office of Veterans Affairs in Room 354 of Student Union I.

5. VA payments are paid on the following basis:
   - Full time: 9 or more hours
   - 3/4 time: 6, 7, 8 hours
   - 1/2 time: less than 1/2, more than 1/4
   - 1/4 time: under 3 hours

Students who are on active duty and those taking fewer than six undergraduate or four graduate hours are paid either tuition and fees or the rate set for the training time, whichever is less. The Veterans Administration will not pay for an audit course.

**Change in Course Hours.** The VA does not permit a drop/add period to exceed 30 days. If a course is dropped more than 30 days after the first day of registration, the VA may require the student to repay all benefits received for that course during the semester. Exceptions are permitted when mitigating circumstances for the drop exist. Details are available at the Office of Veterans Affairs.

**Virginia War Orphans Education Program.** The Virginia War Orphans Program provides educational assistance to children of qualified veterans. To be eligible an applicant must meet the following requirements:

1. The applicant must be between the ages of 16 and 25.
2. The applicant's parent must have served in the armed forces of the United States and must: (a) be totally disabled due to an injury or disease incurred in time of armed conflict; or (b) died as a result of injury or disease incurred in a time of armed conflict; or (c) listed as a prisoner of war or missing in action.
3. The applicant's parent must have been a resident of the Commonwealth of Virginia at the time of entry into active military duty, or must have been a resident of the state for at least 10 consecutive years immediately prior to the date of application.
4. The applicant must provide written verification of acceptance as a student in a state supported post-secondary school.

Eligible individuals are entitled to a maximum of 48 months of tuition—free education at a state supported educational institution. For more information contact the Office of Veterans Affairs.

**Tutorial Services for Veterans.** The VA will pay $84 per month, not to exceed $1,008 per year, for needed tutorial services.
Foundations and Associations

George Mason University Foundation, Inc.
John T. Hazel, Jr., President
Elizabeth C. Dahlin, Director and Assistant Secretary
Otis D. Coston, Jr., Treasurer

The George Mason University Foundation, Inc., is an autonomous organization designed to enrich programs of the University. Private funds augment programs provided by state funds. Contributions to the Foundation are used to enhance the library, build student scholarships and community cultural and intellectual programs at the University. The Foundation qualifies under Internal Revenue Code 501(c)(3) as a nonprofit corporation.

Patriot Club
Associate Director of Development for Athletics
Alan K. Srebnick, Executive Director

The Patriot Club is formed for educational, charitable, and social purposes. All contributions to the Club are deposited in the George Mason University Foundation, Inc., for financial support of student athletic scholarships, helping to make George Mason University athletic teams competitive in intercollegiate competition. Activities of this athletic booster organization are administered in accordance with the latest National Collegiate Athletic Association regulations, policies, and procedures.
Degree Programs
Accounting, M.S.

The Master of Science in Accounting degree, administered by the Department of Accounting and Business Legal Studies, is designed to provide the student with an additional university-level accounting program which, when combined with an undergraduate accounting degree, meets the five-year, 150-hour program supported by the accounting profession, state accountancy regulators, and educators.

Admission Requirements

In general, a degree applicant should meet the following minimum admission requirements:

1. A bachelor's degree from an accredited institution (no application is processed until official transcripts are received from all colleges and universities attended)

2. A grade-point average of 2.75 on a 4.00 scale for the last 60 semester hours of upper-level degree course work; applicants without an undergraduate degree in accounting must have a C or better in undergraduate accounting and business legal studies courses shown below. A student may be admitted to the program in non-degree status while completing the required undergraduate course work

3. Three letters of recommendation from professors or other persons directly knowledgeable of the applicant's professional and academic competence and potential as a graduate student

4. A satisfactory score (normally 500 or higher) on the Graduate Management Admissions Test (GMAT). The GMAT must have been taken within seven years of applying for admission

5. Admission to the M.S. degree program is on a competitive basis. The admissions decision is based on grades in prior academic course work, performance on the GMAT, recommendations, other professional and personal qualifications, and work experience. These criteria are applied flexibly to ensure that individuals with unusual qualifications are not denied admission. Course work taken as a GMU Extended Studies enrollee does not per se qualify an applicant for admittance into the M.S. program. Please refer to the credit transfer and residence requirements applicable to all master's degrees previously described in this catalog.
Degree Requirements

The M.S. program involves between 30 and 54 semester hours of graduate coursework and also may require up to 24 hours of additional undergraduate credit. The exact number of credit hours for an individual is based on an evaluation by the department faculty at the time of admission.

M.S. in Accounting Core (15 hours). Each candidate must complete the following M.S. in Accounting core courses unless, in the opinion of the department faculty, the candidate has previous comparable graduate-level coursework that would justify substitution of other graduate accounting courses.

ACCT 721 Accounting Systems
ACCT 713 Managerial Accounting Theory
ACCT 732 Financial Accounting Theory
ACCT 752 Federal Taxation and Business Planning
ACCT 762 Advanced Auditing Theory and Practice

Graduate Electives (15 hours). Each candidate must complete satisfactorily at least 15 hours of graduate coursework which is not repetitive of previous academic work. Twelve hours must be taken from the courses shown below and must include three hours in Accounting, three hours in Financial Management, three hours in Decision Science, and three hours in Information Resource Management. The remaining three hours must be from 600-level or higher graduate courses.

Accounting:
ACCT 733 Corporate Financial Reporting
ACCT 772 Fund Accounting
ACCT 782 International Accounting
ACCT 792 Seminar in Accounting
ACCT 796 Independent Study and Directed Readings

Financial Management:
FNAN 611 Cases in Financial Administration
FNAN 712 Security Analysis
FNAN 713 Portfolio Analysis
FNAN 714 Long-term Financial Management
FNAN 772 Managerial Economics

Decision Science:
DESC 611 Quantitative Analysis in Business and Operations Management
DESC 742 Management Science

Information Resource Management:
Information Resource Management Courses at the 700 level as shown in this catalog.

Accounting Courses for Students Without an Undergraduate Accounting Degree (24 hours).
ACCT 201 Financial Accounting*
ACCT 202 Managerial Accounting**
ACCT 311 Cost Accounting
ACCT 331 Intermediate Accounting I
ACCT 332 Intermediate Accounting II
ACCT 351 Federal Taxation
ACCT 461 Auditing
BULE 301 The Legal Environment of Business

*ACCT 610 may be substituted.
**ACCT 611 may be substituted.

Graduate Courses Required for Students Without an Undergraduate Business Degree (24 hours).
BULE 610 Law and the Business Environments
DESC 610 Statistical Foundation for Business Decision Making
ECON 602 Economic Analysis
FNAN 610 Financial Management
IRM 610 Computer Systems Management
MGMT 610 Management Theory and Practice
MGMT 697 Organizational Policy and Strategic Management
MKTG 610 Marketing Concepts and Processes

Accounting Courses (ACCT)

610 (formerly BUAD 600) Accounting and Reporting (3:3:0).
Prereq ECON 602 and DESC 610. All aspects of accounting from the basic concept of a transaction through financial statements and their interpretation.

611 (formerly BUAD 601) Managerial Accounting (3:3:0).
Prereq ACCT 610 (formerly BUAD 600) or equiv. Topics include profit planning, relevant costing, budgeting, measurement of performance and product costing. (See School of Business Administration, Special Regulations.)

Prereq ACCT 611 (formerly BUAD 601). Accounting systems design and integration with other information systems.

713 (formerly BUAD 708) Managerial Accounting Theory (3:3:0).
Prereq ACCT 611 (formerly BUAD 601). Controllership function in public or private organizations, particularly in regard to development of policy and evaluation of performance.

Prereq ACCT 611 (formerly BUAD 601). Current literature and theories studied to provide coverage of postulates, assumptions and standards underlying measurement criteria and practices of financial accounting.

733 (formerly BUAD 704) Corporate Financial Reporting (3:3:0).
60 Degree Programs

Biology


792 (formerly BUAD 709) Seminar in Accounting (3:3:0). Prereq 24 hr in the grad prog. Study of selected areas in accounting theory, practice, and methodology and the influence of selected aspects of other disciplines upon the development of accounting concepts.

796 (formerly BUAD 796) Independent Study and Directed Readings (3:0:0). Prereq Foundation and core courses. By special arrangement with professor and approval of the accounting chair.

799 (formerly BUAD 799) Thesis (6:0:0). Prereq 30 hr of grad course work beyond the foundation.

Faculty

Adamkewicz, S. Laura, Ph.D., University of Virginia, 1968; Assistant Professor

Andrykovitch, George E., Ph.D., University of Maryland, 1968; Associate Professor

Bradley, Ted R., Ph.D., University of North Carolina, 1968; Associate Professor

Brown, Luther, Ph.D., Ohio State University, 1978; Associate Professor

deFur, Peter L., Ph.D., University of Calgary, 1980; Assistant Professor

Emsley, Michael G., Ph.D., University of London, 1964; Professor

Ernst, Carl H., Ph.D., University of Kentucky, 1969; Professor

Haefner, James W., Ph.D., Oregon State University, 1975; Assistant Professor

Hart, Jayne T., Ph.D., University of Wisconsin, 1969; Associate Professor

Johnston, David W., Ph.D., University of California, 1954; Professor

Jonas, Robert B., Ph.D., University of North Carolina, 1981; Assistant Professor

Jones, R. Christian, Ph.D., University of Wisconsin, 1980; Assistant Professor

Joyce, Elaine E., Ph.D., Georgetown University, 1970; Associate Professor

Kaplan, Ruth A., Ph.D., University of Wisconsin, 1970; Associate Professor

Kelso, Donald P., Ph.D., University of Hawaii, 1970; Associate Professor

Lawrey, James D., Ph.D., Ohio State University, 1977; Associate Professor

O'Melia, Anne F., Ph.D., Fordham University, 1970; Assistant Professor

Rockwood, Larry L., Ph.D., University of Chicago, 1972; Associate Professor
The master of science program in biology is designed to provide advanced training for recent college graduates, professionals in teaching, technical and other biology-related fields, and research-oriented individuals.

Admission Requirements

An applicant for the M.S. program is expected to have a bachelor’s degree in biology or its equivalent with an grade-point average of 3.00 or better in biology courses, and must submit scores on the Graduate Record Aptitude and Advanced Biology Examinations, and three letters of recommendation. To be accepted as a degree student, an applicant’s scores on the verbal and quantitative aptitude test should total 1,100 or greater, and should be in the 50th percentile or better on the advanced biology portion, with no raw subscore less than 60 (40th percentile).

A student must complete at least 30 semester hours, including 2 hours of seminar, 1 of which must be Biology 690: Introduction to Graduate Studies in Biology. Some specializations require a thesis (see below). Initially, a student is assigned an academic adviser. The student must form a three-member graduate committee within the first 15 hours of course work. At the conclusion of the program, the student must successfully complete an oral and written comprehensive examination or defend a thesis. The basic requirements for each specialization are detailed below.

1. Organismal Biology: An organized set of course work is developed after consultation with an academic adviser. Traditional programs of study such as botany, vertebrate zoology, developmental biology, animal behavior, genetics, or physiology may be included in this specialization.

2. Environmental Biology: A student electing this specialization must take Biology 640 and 641: Environmental Biology I and II, and must complete at least one semester of Biology 692: Seminar in Environmental Biology. The remaining hours will be selected from a list of environmentally-oriented courses in consultation with the academic adviser. The student is encouraged to take one or two courses outside of the department subject to approval by the graduate committee.


4. Molecular, Microbial, and Cellular: The student must complete three hours of seminar in addition to Biology 690. In consultation with the academic adviser, the student may enroll in Biology 691: Current Topics in Biology and/or Biology 695: Seminar in Molecular, Microbial, and Cellular Biology. All further course work is selected after consultation with the academic adviser.

5. Interpretive Biology: This specialization is designed for individuals currently or recently employed in interpreting biology to the public, including teachers, park naturalists, and science writers. Nine hours are chosen from a list of courses which are primarily nonbiology graduate courses. A minimum of three hours will be taken outside of the department. The remaining 21 hours will be graduate-level biology courses selected after consultation with the academic adviser.

Environmental Biology-Public Policy, Ph.D.

The objective of the Ph.D. program in environmental biology-public policy is to offer training in the
traditional research-oriented disciplines of ecology
and environmental biology as well as in public
affairs, business administration and economics.
Graduates will possess research, technical and
administrative skills that should enable them to deal
effectively with pure and applied environmental
research, policy issues, environmental legislation,
and implementation of environmental law.
Prospective students who are already employed as
environmental biologists by government, industry or
consulting firms would have the opportunity to
upgrade and broaden their skills. Recent bachelor’s
or master’s degree recipients would gain practical
experience and important contacts during the
internship phase of their training.

Admission Requirements

An applicant should have a bachelor’s degree in
biology or the equivalent, with an overall grade-
point average of at least 2.75 (on a scale of 4.00) in
the last 60 hours of undergraduate work and a 3.00
average in all biology courses. A student who
applies for graduate work but who lacks a bachelor’s
degree or master’s degree in biology must complete
a program of undergraduate course work as
designated by the doctoral coordinator acting in
consultation with the doctoral committee in the
Department of Biology. That student must then take
the Graduate Record Examination and score in the
50th percentile or better on each sub­area of the
Advanced Test in Biology. All students, however, will
be expected to have the following courses or their
equivalent in their academic backgrounds:
introductory biology, cell biology, genetics, ecology,
animal physiology, plant physiology or plant
morphology, evolution, general chemistry (2
semesters), organic chemistry, biochemistry, college
mathematics (2 semesters), statistics and college
physics. The application deadline for admission in
the Fall semester is April 1 and for the Spring
semester, November 1.

All applicants for degree status must submit:

1. Scores on the Graduate Record Examination,
   including the Advanced Test in Biology as stated
   above
2. Three letters of recommendation
3. Official transcripts from each college or university
   attended
4. A recent resume.

An interview with the doctoral coordinator is
encouraged.

Degree Requirements

Because graduate courses in the Department of
Biology are offered in the late afternoon or evening
hours, course work for the Ph.D. degree may be
completed on a part-time basis. The Ph.D. in
environmental biology-public policy requires 90
semester hours of study beyond the bachelor’s
degree, 30 of which may be from master’s-level
work or its equivalent. At least 48 hours of work
must be completed at George Mason University. The
following requirements must be satisfied:

1. A minimum of 18 hours of graduate course work
   in biology, computer science, and mathematics.
   These 18 hours will include at least one course in
   each of the following areas: quantitative ecology,
aquatic or terrestrial ecology, applied ecology, and
statistics or mathematics; a minimum of two
   semesters (four semester hours) of doctoral-level
   environmental biology seminars (Biol 991) are also
   required;

2. Two graduate-level courses each from a selected
   list of courses in the areas of economics, business
   administration and public affairs for a total of 18
   semester hours. Each student is responsible for
   acquiring specific prerequisites or obtaining
   permission from the instructor to enroll in these
   graduate-level courses;

3. An internship. Up to 12 semester hours may be
   earned by fulfilling the internship requirement; the
   internship may be with an approved industry,
government agency, consulting firm, or a
professional scientific organization. Internships will
be negotiated on a case­by­case basis by the
Biology Department on behalf of the student; the
student’s committee, after assessing the strengths
and interests of the student and identifying available
organizations or scientific mentors, will determine
the location duration and other terms of the
internship. This requirement may be waived if the
student has had substantial experience of this kind
as determined by the student’s supervisory
committee;

4. A Ph.D. dissertation; a maximum of 24 semester
   hours may be earned.

Sequence of Study

Upon admission to the program, a plan of course
work will be developed by students and their
advisers. In the first Fall semester, each student will take a preliminary examination, the results of which will be used in designing future courses to be taken. As soon as possible, the student should establish a supervisory committee, consisting of a major professor and at least two environmental biologists in the department. When course work has been completed, a second phase of the program will be entered, namely advancement to candidacy. The student will be advanced to candidacy upon: (1) enlarging the supervisory committee to include two other members, one of whom must be from one of the non-biology departments participating in the doctoral program; (2) successful completion of a written (and optional oral) qualifying examination, and (3) submission of an acceptable dissertation proposal.

Residency, Candidacy and Other Requirements

A student must advance to candidacy (complete the qualifying examination) within five years of initial registration or within four years after the M.S. is completed. Once students advance to candidacy, however, they are expected to be in continuous residence on a full-time basis. The minimum period of full-time residency is one year. The dissertation and final examination must be completed within six years after advancing to candidacy.

Biological Courses (BIOL)


520 Systematics in Complex Angiosperm Families (3:1:6). Prereq BIOL 344 or 534 or Pol. Morphology and speciation of the more complex families such as Poaceae, Cyperaceae, and Asteraceae. Lab emphasizes identification of specimens and acquaintance with taxonomic literature.

526 Paleocology (4:3:3). Prereq Pol. Study of origin and evolution of interrelationships between components of the earth’s major ecosystems.

529 Vertebrate Paleontology (4:2:6). Prereq Course in vertebrate zoology or comparative anatomy or invertebrate paleontology, or Pol. Study of evolutionary patterns of vertebrates. Emphasis on major adaptive radiations.

533 Selected Topics in Plant Biology (3:3:0) or (3:2:3). Prereq 8 hr in 100-level BIOL, upper-division course in botany and Pol. Topic depends upon the specialty of the instructor. May be repeated only with PoC.


535 Paleobotany (4:3:3). Prereq Plant morphology or anatomy or vertebrate or invertebrate paleontology. Evolution of fossil plants, their origin, history, and extinction, incl the various selective pressures responsible for these events. Lab presents techniques to elucidate fossil plant structure. Three Sat field trips. Fall.

536 Ichthyology (4:3:3). Prereq 8 hr in BIOL or Pol. Study of the systematics, evolution, physiology, ecology and behavior of fishes.

537 Ornithology (4:2:6). Prereq Course in ecology or Pol. Study of the evolution, systematics, physiology, ecology and behavior of birds emphasizing field work. Spring of odd-numbered yrs.

538 Mammalogy (4:2:6). Prereq Course in ecology or Pol. Study of the evolution, systematics, physiology, ecology, and behavior of mammals, emphasizing field work. Fall of odd-numbered yrs.

539 Herpetology (4:2:6). Prereq Course in ecology or Pol. Study of the evolution, systematics, physiology, ecology and behavior of amphibians and reptiles, emphasizing field work. Spring of even-numbered yrs.

556 Microbial Physiology and Metabolism (3:3:0). Prereq BIOL 301 or Pol. A comprehensive study of microorganisms covering aspects of growth, nutrition, transport, autotrophic and heterotrophic metabolism, regulation, and differentiation.

557 Experiments in Microbiology (2:0:6). Prereq BIOL 556 or Pol. Students perform a select group of experiments that illustrate techniques used in the study of microbial taxonomy, genetics, physiology, and metabolism.

560 Biological Ultrastructure (4:2:6). Prereq BIOL 301, CHEM 313-314 and Pol. Intro to techniques involved in electron microscopy and to the interpretation of electron micrographs of plants and animals.

561 Comparative Animal Physiology (3:3:0). Prereq BIOL 326 and biochemistry or Pol. Detailed study of selected physiological systems of invertebrates and vertebrates, emphasizing current research.

563 Virology (3:3:0). Prereq BIOL 301 and 311 or Pol. Fundamental concepts of the nature of viruses, virus classification, cultivation and biochemistry. Bacteriophage and animal viruses emphasized. Fall.

564 Techniques in Virology (2:1:3). Co- or Prereq BIOL 563 or Pol. Emphasis on propagation of animal viruses in embryonated eggs and cell culture, titration of animal viruses and bacteriophage, serological techniques used in virology and biochemical and biophysical characterization of viruses.

572 Human Genetics (3:3:0). Prereq General genetics or Pol. Study of the inheritance of man, emphasizing current problems, incl genetic control of metabolic diseases, effects of radiation and chemical agents in the environment, and directed genetic change. Fall, odd-numbered years.

573 Developmental Genetics (3:3:0). Prereq General genetics or Pol. Study of genetic approaches to the problem of eukaryotic development emphasizing current research on
the regulation of gene enzyme systems. Fall, even-numbered years.

574 Population Genetics (3:3:0). Prereq General genetics or Pol. Study of the genetic structure and dynamics of populations, both real and ideal. Spring, even-numbered years.

575 Selected Topics in Genetics (3:3:0). Prereq General genetics or Pol. Different topics in different years. Topics include molecular, developmental, physiological, and classical genetics emphasizing current problems and research. May be repeated once with PoC. Spring, odd-numbered years.

601 Advanced General Biology: Classical Principles and Modern Views I (3:3:0). Prereq 24 hr in life sciences or Pol. Intensive review of the fundamental concepts relating to cellular biology and to the structure and function of plants and animals. Available for cr toward M.S. with specialization in interpretive biology only.

602 Advanced General Biology: Classical Principles and Modern Views II (3:3:0). Prereq 24 hr in life sciences or Pol. Intensive review of the fundamental concepts relating to genetics, development, evolution, behavior and ecology. Available for cr toward M.S. with specialization in interpretive biology only.

622 (522) Methods and Principles of Animal Taxonomy (3:1:6). Prereq Course in evolution or Pol. Theoretical basis of techniques used in animal classification with emphasis on their practical application to a lab problem dealing with a particular animal group.


624 Coevolution of Plants and Animals (3:3:0). Prereq Course in evolution. Topics incl the mechanisms of evolution of plant and animal interactions, chemical communication, population dynamics, energetics of ecosystems, and development of the interactions over time.

625 Animal Navigation (3:3:0). Prereq Course in animal behavior or statistics or Pol. Exploration of mechanisms by which animals orient and navigate while homing or migrating. Emphasis on vertebrates.

630 Selected Topics in Vertebrate Zoology (3:3:0) or (3:2:3). Prereq Courses in vertebrate zoology or comparative anatomy and ecology or Pol. Topic depends on specialty of instructor. May be repeated once.


640 Environmental Biology I (3:3:0). Prereq Course in ecology or Pol. Patterns of climate and weather, tectonics, soil formation, and surface and ground water movements. Fall.

641 Environmental Biology II (3:3:0). Prereq Course in ecology or Pol. Effects of human activities on environment. Airborne, water-borne and solid "waste" material are considered with respect to sources, control, and effects on the ecosystem. Spring.

643 Microbial Ecology (4:3:3). Prereq Course in microbiology or Pol. Study of relationships between microorganisms and their natural environment, and methodology for observing their natural environment, and biochemical activities in those environments. Spring of odd-numbered yrs.

644 Tropical Ecosystems (4:3:3). Prereq Course in ecology or Pol. Terrestrial, aquatic and marine ecosystems in the tropics emphasizing plant communities and plant-animal interactions, and the role of man in the tropics. Field trip to the tropics is req as part of lab.

645 Freshwater Ecology (4:3:3). Prereq Course in ecology. Physical and chemical features of freshwater lakes and streams and relationship to the biota. Local streams and lakes are investigated. Fall.

646 Estuarine and Coastal Ecology (4:3:3). Prereq Course in ecology and Pol. Emphasizes marine biology of estuarine and coastal habitats of the Chesapeake Bay region and factors affecting distribution and abundance of organisms. Lab provides training in field measurement of physical and chemical parameters and collection and identification of local organisms. Extended field trips made to mid-Atlantic sites. Summer.

647 Terrestrial Plant Ecology (4:3:3). Prereq Course in ecology. Consideration of community organization, development, productivity and mineral cycling, interactions between plants and competitors, herbivores and various environmental factors, especially light, water and soil. Field and lab emphasize data collection and statistical analysis.


649 Biological Resource Management (3:3:0). Prereq BIOL 641 and 648 or Pol. Modern ecological theories and methods applied to biological resource management covering problems from fisheries to forestry. Problems in achieving optimum productivity of specific resources and application of systems analysis.

662 Molecular and Cellular Aspects of Development (3:3:0). Prereq Course in cell or molecular biology or Pol. Lectures, readings and discussions emphasizing gene expression and its control during animal embryogenesis and oogenesis. Examples of cellular differentiation (cancer and aging) are discussed.

665 Environmental Hazards to Human Health (3:3:0). Prereq Course in animal physiology or Pol. Health effects of chemical contaminants of air, water, and food resulting from industrialized society. Incl identifying, evaluating, and controlling hazards.

667 Molecular Genetics (3:3:0). Prereq BIOL 311 or Pol. Study of molecular structure of genetic material and control of gene expression in viruses, procaryotes, and eucaryotes.

668 Advanced Techniques in Molecular Biology (4:2:6). Prereq BIOL 301, 311; CHEM 313-314, 563-564; or Pol; rec BIOL 361. Experimental studies utilizing current methods for purification and characterization of biologically important compounds; designed to provide training for research in molecular biology.
669 Pathogenic Microbiology (3:3:0). Prereq Courses in microbiology and in biochemistry. Molecular mechanisms of exotoxins, endotoxins, and viral pathogenicity and the immune response in infectious diseases.


690 Introduction to Graduate Studies in Biology (1:1:0). Required of all new M.S. students in Biology. Fall.

691 Current Topics in Biology (1:1:0). May be repeated for cr.

692 Seminar in Environmental Biology (1:1:0). Topics vary. May be repeated for cr.

693, 694 Directed Studies in Biology (1-8:0:0). Prereq Pol, PoC and Po student’s graduate committee. Topic study not otherwise available in grad program. May involve any combination of reading assignments, tutorials, lectures, papers, presentations, or lab or field study, determined in consultation with instructor. May not be used to fulfill explicit undergrad prereq for grad work.

695 Seminar in Molecular, Microbial, and Cellular Biology (1:1:0). Review and discussion of recent literature in a specialized area. Incl student presentations. May be repeated for cr.

727 Current Problems in Evolutionary Theory (3:3:0). Prereq Course in evolution or Pol. Course on contemporary evolutionary thought.

741 Advanced Topics in Environmental Biology (3:3:0) or (3:2:3). Prereq 8 hr ecology or Pol. Topics vary. May be repeated only with PoC.

745 Environmental Toxicology (3:3:0). Prereq Courses in ecology and physiology or Pol. Study of nature, distribution, and interaction of toxic chemicals released into the environment. Emphasizes effects on non-human biota, detection and fate of chemicals and implications for government regulation.

747 Ecosystem Modeling (4:3:3). Prereq Calculus, 8 hr ecology, programming experience or Pol. Students learn to conceptualize ecological systems, represent these conceptualizations mathematically, and to develop and test models against field data.

748 Principles of Biological Demography (3:3:0). Prereq Course in population biology or Pol. Topics incl sources and analysis of data for human and non-human populations, the life table, population projection, and application of methods to specific biological populations.

793 Research in Biology (1-3:0:0). Prereq 8 grad hr in BIOL and Pol and PoC. Library, lab, or field investigation under supervisor’s guidance. May be repeated for a total of three hr.

799 Thesis (3-6:0:0). Prereq 8 grad cr in BIOL and Pol and PoC. Thesis research under direction of supervisor. Students who take BIOL 793 may receive no more than a total of six cr for both BIOL 793 and BIOL 799.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in biology. Program of studies designed by the student’s discipline director and approved by student’s doctoral committee which brings the student to participate in research of discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollment may be repeated.

894 Supervised Internship (3-12:0:0). Prereq PoC, Po student’s doctoral committee. Training in application of ecological skills to environmental management and policy under supervision of a qualified environmental scientist at a governmental agency, consulting firm, industry or other acceptable organization.

991 Advanced Seminar in Environmental Biology (2:2:0). Prereq 8 hr ecology or Pol. Topics will generally address the interface between environmental biology and public policy, but some may address more basic environmental biology. May be repeated. Required of all Ph.D. students.

999 Doctoral Dissertation Research (3-12:3:0). Prereq Approval of dissertation prop. Research dealing with a basic or applied problem in environmental biology.
## Business Administration

**Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>University/Institution</th>
<th>Year(s)</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolce, William J.</td>
<td>Ph.D.</td>
<td>The American University</td>
<td>1974; 1982</td>
<td>Assistant Professor, Management</td>
</tr>
<tr>
<td>Buchanan, Phillip G.</td>
<td>Ph.D.</td>
<td>Temple University</td>
<td>1982; 1982</td>
<td>Assistant Professor, Accounting</td>
</tr>
<tr>
<td>Cao, Le Thi</td>
<td>D.B.A.</td>
<td>University of Southern California</td>
<td>1975; 1982</td>
<td>Assistant Professor, Accounting</td>
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<tr>
<td>Carper, William B.</td>
<td>Ph.D.</td>
<td>Virginia Polytechnic Institute and State University</td>
<td>1979; 1982</td>
<td>Assistant Professor of Management</td>
</tr>
<tr>
<td>Coffinberger, Richard L.</td>
<td>J.D.</td>
<td>Wake Forest University</td>
<td>1974; 1976</td>
<td>Associate Professor, Business Legal Studies</td>
</tr>
<tr>
<td>Crawford, Peggy J.</td>
<td>Ph.D.</td>
<td>Purdue University</td>
<td>1979; 1982</td>
<td>Assistant Professor, Finance</td>
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<tr>
<td>Domzal, Teresa</td>
<td>Ph.D.</td>
<td>University of Cincinnati</td>
<td>1981; 1982</td>
<td>Professor, Marketing</td>
</tr>
<tr>
<td>English, Jon</td>
<td>Ph.D.</td>
<td>University of Florida</td>
<td>1972; 1982</td>
<td>Professor, Management</td>
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<tr>
<td>Entrikin, Richard</td>
<td>Ph.D.</td>
<td>St. Louis University</td>
<td>1976; 1982</td>
<td>Associate Professor, Marketing</td>
</tr>
<tr>
<td>Floyd, Herbert F.</td>
<td>J.D.</td>
<td>Georgetown University</td>
<td>1957; 1982</td>
<td>Associate Professor, Marketing</td>
</tr>
<tr>
<td>Gardner, Ella P.</td>
<td>D.B.A.</td>
<td>George Washington University</td>
<td>1982; 1982</td>
<td>Assistant Professor, Decision Sciences</td>
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<tr>
<td>Goretsky, M. Edward</td>
<td>Ph.D.</td>
<td>The American University</td>
<td>1968; 1982</td>
<td>Assistant Professor, Marketing</td>
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<tr>
<td>Grimshaw, Alan E.</td>
<td>D.B.A.</td>
<td>University of Maryland</td>
<td>1979; 1982</td>
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<tr>
<td>Harvey, James</td>
<td>Ph.D.</td>
<td>Pennsylvania State University</td>
<td>1977; 1982</td>
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<td>Hicks, Margaret</td>
<td>D.B.A.</td>
<td>University of Maryland</td>
<td>1982; 1982</td>
<td>Assistant Professor, Accounting</td>
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<td>Hysom, John L.</td>
<td>Ph.D.</td>
<td>The American University</td>
<td>1973; 1982</td>
<td>Associate Professor, Finance</td>
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<tr>
<td>Johnston, Robert D.</td>
<td>Ph.D.</td>
<td>University of Alabama</td>
<td>1974; 1982</td>
<td>Associate Professor, Finance</td>
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<tr>
<td>Kelly, David L.</td>
<td>Ph.D.</td>
<td>University of North Carolina</td>
<td>1976; 1982</td>
<td>Associate Professor, Decision Sciences</td>
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<td>Kovach, Kenneth A.</td>
<td>D.B.A.</td>
<td>University of Maryland</td>
<td>1975; 1982</td>
<td>Professor, Management</td>
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<td>Lynn, Susan A.</td>
<td>D.B.A.</td>
<td>University of Maryland</td>
<td>1982; 1982</td>
<td>Assistant Professor, Accounting</td>
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<tr>
<td>Marchione, Anthony R.</td>
<td>Ph.D.</td>
<td>The American University</td>
<td>1972; 1982</td>
<td>Associate Professor, Management</td>
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<tr>
<td>McCrohan, Kevin F.</td>
<td>Ph.D.</td>
<td>City University of New York</td>
<td>1978; 1982</td>
<td>Professor, Marketing</td>
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<tr>
<td>Milispaugh, Peter E.</td>
<td>J.D.</td>
<td>The American University</td>
<td>1968; 1982</td>
<td>Associate Professor, Business Legal Studies</td>
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<td>Ondeck, Carol M.</td>
<td>D.B.A.</td>
<td>The George Washington University</td>
<td>1978; 1982</td>
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<td>Pejsar, Roderick J.</td>
<td>Ph.D.</td>
<td>University of Nebraska</td>
<td>1975; 1982</td>
<td>Assistant Professor, Management</td>
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<td>Render, Barry</td>
<td>Ph.D.</td>
<td>University of Cincinnati</td>
<td>1975; 1982</td>
<td>Associate Professor, Decision Sciences</td>
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<td>Roberson-Bennett, Patricia A.</td>
<td>Ph.D.</td>
<td>University of Maryland</td>
<td>1982; 1982</td>
<td>Associate Professor, Management</td>
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<tr>
<td>Ruth, Stephen R.</td>
<td>Ph.D.</td>
<td>University of Pennsylvania</td>
<td>1970; 1983</td>
<td>Professor, Decision Sciences</td>
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<td>Rymer, Victoria S.</td>
<td>Ph.D.</td>
<td>University of Maryland</td>
<td>1983; 1982</td>
<td>Assistant Professor, Accounting</td>
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<td>Samuels, Linda B.</td>
<td>J.D.</td>
<td>University of Virginia</td>
<td>1975; 1982</td>
<td>Associate Professor, Business Legal Studies</td>
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<td>Sands, Ben F., Jr.</td>
<td>D.B.A.</td>
<td>The George Washington University</td>
<td>1975; 1982</td>
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<tr>
<td>Sibley, Edgar H.</td>
<td>Sc.D.</td>
<td>Massachusetts Institute of Technology</td>
<td>1967; 1982</td>
<td>University Professor, Decision Sciences</td>
</tr>
<tr>
<td>Stagliano, A. J.</td>
<td>Ph.D.</td>
<td>University of Illinois</td>
<td>1977; 1982</td>
<td>Associate Professor, Accounting</td>
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<td>Steinhauer, Raleigh F.</td>
<td>D.B.A.</td>
<td>The George Washington University</td>
<td>1972; 1982</td>
<td>Professor, Management</td>
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<tr>
<td>Tongren, Hale N.</td>
<td>D.B.A.</td>
<td>The George Washington University</td>
<td>1968; 1982</td>
<td>Professor, Marketing</td>
</tr>
</tbody>
</table>
Business Administration, M.B.A.

The master of business administration degree, offered by the School of Business Administration, is designed to provide a high level of professional education in several functional areas of business administration. The program is oriented to management in both business and government. Most courses are offered in the evening and some are offered off-campus.

The student-to-faculty ratio in the classroom is less than 25 to 1. There is a balance of full-time faculty members who have doctoral degrees and part-time instructors whose normal employment is with government or businesses in the metropolitan Washington area. This balance in faculty provides the student with an exposure to both theory and practice and, thus, an excellent opportunity for a varied learning experience.

Admission Requirements

In general, a degree applicant should meet the following minimum admission requirements:

1. A bachelor’s degree from an accredited institution (No application is processed until all official transcripts are forwarded from the institutions attended.)

2. A grade-point average of 2.75 on a 4.00 scale for the last 60 semester hours of upper-level course work, with a grade of C or better in courses applied against the foundation requirements

3. Three letters of recommendation from professors or other persons directly knowledgeable of the applicant’s professional and academic competence

4. A satisfactory score (normally 500 or higher) on the Graduate Management Admissions Test (GMAT) (The GMAT must have been taken within seven years of applying for admission).

Admission to the M.B.A. degree program is on a competitive basis. The admissions decision is based on grades in prior academic course work, performance on the GMAT, recommendations, other professional and personal qualifications and work experience. These criteria and those which follow are applied flexibly to assure that people with unusual qualifications are not denied admission. Course work taken as an Extended Studies enrollee per se does not qualify a student for admittance into the M.B.A. program.

Degree Requirements

The M.B.A. program involves between 36 and 60 semester hours of graduate course work. The exact number of credit hours for an individual is based on an evaluation by the Master of Business Administration Admissions Committee at the time of application. The committee decision is based on the applicant’s prior academic background, with particular emphasis on knowledge acquired in the foundation course work described below. The structure of the program is based on three levels of course work: foundation courses (0-24 hours); M.B.A. core courses (21 hours) and elective courses (15 hours). A student may elect a thesis option to substitute for six hours of course work with approval of the Associate Dean, School of Business Administration.

Foundation Course Work (24 Hours)

Each graduate student must complete the course work identified in the foundation courses listed below, unless the material offered in the course has been successfully completed prior to admission. These courses provide a common body of knowledge for a student wishing to pursue graduate work at the M.B.A. level. There are 24 hours of graduate foundation course work. Some of these may be satisfied by academic course work in the student’s background. Completion of all foundation course work is prerequisite to courses at the next level, the M.B.A. core. Normally an undergraduate degree in business administration will satisfy most of the foundation course work requirements.

The foundation courses are:

- ACCT 610 (formerly BUAD 600) Accounting and Reporting (3)
- FNAN 610 (formerly BUAD 610) Financial Management (3)
- MKTG 610 (formerly BUAD 620) Marketing Concepts and Processes (3)
- IRM 610 (formerly BUAD 630) Computer Systems for Management (3)
- DESC 610 (formerly BUAD 640) Statistical Foundation for Business Decision Making (3)
- BULE 610 (formerly BUAD 650) Law and the Business Environment (3)
- MGMT 610 (formerly BUAD 660) Management Theory and Practice (3)
- ECON 602 Economic Analysis (offered by the Economics Department) (3)

M.B.A. Core (21 Hours)

Each candidate must complete the following M.B.A. core courses unless, in the opinion of the School of
Business Administration faculty, the candidate has had previous comparable graduate-level course work which would justify acceptance in lieu of core courses.

ACCT 611 (formerly BUAD 601) Managerial Accounting (3)
FNAN 611 (formerly BUAD 611) Cases in Financial Administration (3)
MKTG 611 (formerly BUAD 621) Cases in Managerial Marketing (3)
DESC 611 (formerly BUAD 641) Analysis in Business and Operations Management (3)
MGMT 611 (formerly BUAD 661) Cases in Organizational Behavior (3)
MGMT 797 (formerly BUAD 797) Business Policy (3)
MGMT 798 (formerly BUAD 798) Seminar in Business Research (3)
(See note on thesis option)

Electives (15 hours)
Specialty Areas (6–12 Hours)

Each candidate must complete satisfactorily at least two, but no more than four, advanced (700 and above) graduate courses in one of the following areas:

Accounting: ACCT 712, 713, 732, 733, 752, 762, 772, 782, 792


Financial Management: FNAN 711, 721, 722, 731, 732, 741, ACCT 752, REUD 783, 785

Information Resource Management: IRM 790 plus one or more courses from IRM 720, 730, 740, 750, 760, 770

International Business: MKTG 775, MGMT 781

Management Science: DESC 742 plus one course from DESC 535, 743, 744

Managerial Economics: FNAN 771, 772, DESC 744

Marketing Management and Research: MKTG 722, 724, 725, 726, 727, REUD 784

Real Estate and Urban Development: REUD 582, 583, 584, 782, 783, 784, 785, 787, 788, 789, BULE 703

Thesis Option

On completion of 30 hours of M.B.A. core or elective courses, the student may elect to fulfill the requirement for MGMT 798 (formerly BUAD 798) Seminar in Business Research, and one elective course, by completing a thesis. Six credit hours may be earned by electing the thesis option.

Special School Regulations

1. Provisional students and nondegree students contemplating degree status must complete 9 of their first 12 graduate hours from among M.B.A. foundation courses if they have not had the foundation course work, or from core courses if all foundation course requirements are satisfied.

2. No more than 12 hours of M.B.A. foundation or core credits may be earned through enrollment in nondegree status or through Extended Studies enrollment prior to acceptance in degree status. A grade of B or better is necessary to satisfy foundation or core requirements.

3. A maximum of six semester hours of graduate credit in approved 500-level graduate courses may be authorized; however, these courses must be taken after entry into the program and normally are taken prior to the related M.B.A. core courses.

4. A maximum of six hours of elective credit in another graduate program of this University may be allowed provided they are in related field and have prior approval of the Associate Dean, School of Business Administration.

5. Subject to general transfer policies of the Graduate School, up to six hours of graduate course work may be transferred from other institutions. However, to be considered for transfer, such work must have been completed within five years prior to the date of admission to the Graduate School of the University.

6. In all cases, students must complete a minimum of 24 hours of graduate course work at the University while in degree status.

7. Required foundation courses must be completed prior to initiation of core courses, although there may be an overlap (normally limited to three hours) when a student is completing the foundation sequence. Core courses should be completed prior to taking electives.

8. No credit is granted for work done in absentia.

Accounting (ACCT). Graduate courses in Accounting are listed in the catalog under the heading of M.S. in Accounting.
Business Legal Studies Courses (BULE)


702 (formerly BUAD 751) Business and the Regulatory Process (3:3:0). Prereq BULE 610 (formerly BUAD 650) or equiv. Regulatory process as it affects business; emphasis on interaction of legislative, administrative, and judicial policies and procedures as they influence the formulation and interpretation of regulations.

703 (formerly BUAD 781—Course same as REUD 703) Land Use Control and Regulation (3:3:0). Prereq REUD 301 or REUD 582 (formerly BUAD 680) or Pol and BULE 610 (formerly BUAD 650). Basic principles of law affecting the use of land and natural resources incl legal remedies and defenses available to the private citizen. Emphasis on recent law and federal and state statutes (Same as REUD 703).

Decision Sciences Courses (DESC)

535 (formerly BUAD 535) Computer Simulation (3:3:0). Prereq IRM 610 (formerly BUAD 630) and DESC 611 (formerly BUAD 641) and Pol. Computer Simulation as a scientific methodology in corporate planning and operations analysis emphasizing model development, implementation, and analysis of results. Project, lecture, and lab.

563 (formerly BUAD 563) Seminar in Operations Management (3:3:0). Prereq DESC 611. Aspects of productivity, technology, new processes, materials, products, equipment and facilities. Implications of new technology in managing the operation (production) function are treated. Lecture, discussion, cases, and projects.

610 (formerly BUAD 640) Statistical Foundation for Business Decision Making (3:3:0). Prereq 6 cr of math. The use of statistical methods as scientific tools in the analysis of practical problems in business decision making. Topics incl: descriptive statistics; probability theory; probability distribution; sampling distribution, inference-estimation and hypothesis testing; elementary decision theory; time series analysis; linear regression and correlation; the analysis of variance.

611 (formerly BUAD 641) Quantitative Analysis in Business and Operations Management (3:3:0). Prereq DESC 610 and ECON 602. A systems approach which addresses a wide range of operations management decisions from long-term policy and systems design questions to daily scheduling, cost control, and quality control decisions. Emphasis is on modeling, quantitative analysis of systems, case studies, and using computer programs to solve operations management problems.

742 (formerly BUAD 742) Management Science (3:3:0). Prereq DESC 611. Operations research techniques for systems analysis. Addresses prominent mathematical programming and stochastic process topics from linear programming, networks, integer programming, goal programming, decision theory, dynamic programming, Markov processes, inventory theory, and queuing theory. Use of computer software in problem solving and in case study analyses.


744 (formerly BUAD 744) Contemporary Issues in Decision Analysis (3:3:0). Prereq DESC 611 (formerly BUAD 641). Application of analytic reasoning and skills to practical problems in business administration. Topics incl problem structure, analysis, and solution implementation, emphasizing contemporary approaches to decision analytic techniques.

796 (formerly BUAD 796) Independent Study and Directed Readings (3:0:0). Prereq Foundation and core courses. By special arrangement with professor and approval of the Decision Science Chair.

799 (formerly BUAD 799) Thesis (6:0:0). Prereq 30 hr of grad course work beyond the foundation.

Finance Courses (FNAN)

610 (formerly BUAD 610) Financial Management (3:3:0). Prereq ECON 602, ACCT 610 (formerly BUAD 600), DESC 610 (formerly BUAD 640). Topics incl management of working capital, determination of the cost of capital and optimal financial structure, capital budgeting processes, and the overall integration of financial management to achieve a maximization of wealth-decision criteria.

611 (formerly BUAD 611) Cases in Financial Administration (3:3:0). Prereq ACCT 611 (formerly BUAD 601), FNAN 610 (formerly BUAD 610) or equiv. Applying the theories of finance to the formulation and application of policies. Internal financial analysis, financial forecasting, management of assets, rate-of-return, capital formation cases, financial management in the multinational environment. (See School of Business Administration, Special Regulations.)

711 (formerly BUAD 711) Long-Term Financial Management (3:3:0). Prereq FNAN 611 (formerly BUAD 611). Analysis of capital budgeting and long-term asset financing. Capital budgeting and financing techniques for the fixed asset portion of balance sheet are considered.

721 (formerly BUAD 712) Security Analysis (3:3:0). Prereq FNAN 611 (formerly BUAD 611). The analysis of equity securities and debt instruments given the implications of the efficient market hypothesis and modern capital market theory.


markets, including the organization, relative efficiency and interaction between market segments.

732 (formerly BUAD 717) Financial Institutions (3:3:0). Prereq FNAN 611 (formerly BUAD 611). Financial institutions as intermediaries within the financial markets. Organizational and regulatory forces in terms of influences upon management.


771 (formerly BUAD 772) Managerial Economics (3:3:0). Prereq ECON 602 and FNAN 611 (formerly BUAD 611). Economic theory as it applies to specific business situations and decisions. Production levels, price determination, costs, competition, profits, supply/demand.


796 (formerly BUAD 796) Independent Study and Directed Readings (3:0:0). Prereq Foundation and core courses. By special arrangement with professor and approval of the Finance Chair.

799 (formerly BUAD 799) Thesis (6:0:0). Prereq 30 hr of grad course work beyond the foundation.

Information Resource Management Courses (IRM)

610 (formerly INFS 610/BUAD 630) Computer Systems for Management (3:3:0). Prereq Graduate standing. Examination of computer information systems and their interrelations with management processes. Emphasis on management information system life cycle from manager's perspective. Lecture and computing lab, including programming in BASIC.

720 (formerly INFS 734/BUAD 734) Analysis and Design of Computer Systems (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Computer systems life cycle with emphasis on information req analysis, feasibility studies, system design, equipment selection, and the implementation process. Student teams are assigned system development projects to work with users to define system req and to prepare implementation plans.

730 (formerly INFS 732/BUAD 732) Decision Support Systems (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Use of decision support systems in large organizations' data bases. Course concentrates on technical and administrative issues facing companies and agencies which need to go beyond MIS for meeting more complex information needs. Integrates user and manager's perspective. Introduces micro-based and mainframe-based DSS packages. Project and computer lab.

740 Distributed Systems Applications (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Technical and managerial issues in the planning installation, support, use, and operation of business data communication systems. Term project and laboratory.

750 Managerial Applications of Microcomputers (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Selection and use of microcomputer hardware and software for management applications such as word processing, spread sheet analysis, graphics, communications, file management, and data base management. Term project and laboratory.

760 (formerly INFS 520) Human Engineering Issues in Computer Systems Design (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Surveys the various human factors and ergonomic aspects of computer systems, including hardware and information displays as well as human factors principles of software design. Return on investment on alternative human factors decisions examined in applied settings. Cases and laboratory.

790 (formerly INFS 733/BUAD 733) Contemporary Issues in Information Resource Management (3:3:0). Prereq IRM 610 (formerly INFS 610/BUAD 630). Introduction to the concepts, techniques, and implementation of Information Resource Management in businesses, government agencies (federal, state, local), and other organizations. Emphasis is on the use of contemporary techniques in IRM applied to the full spectrum of information resource issues, including equipment, systems, hardware, software, training, data communications, and human factors. Term project.

Management Courses (MGMT)


611 (formerly BUAD 661) Cases in Organizational Behavior (3:3:0). Prereq MGMT 610 (formerly BUAD 660) or equiv. Study and application of principles of individual and group behavior to the solution of human problems in business organizations, domestic and international. Relationships with superiors and subordinates in formulating and accomplishing personnel policies. (See School of Business Administration, Special Regulations.)

711 (formerly BUAD 764) Organization Analysis and Development (3:3:0). Prereq MGMT 610 (formerly BUAD 660). Application of theory and research in the study of organizational effectiveness. Emphasis on diagnosis of contributing factors; use of models; and design and implementation of organization development programs.


722 Human Resource Planning (3:3:0). Prereq MGMT 610
(formerly BUAD 660). This course examines the personnel/human resource process which provides adequate human resources to achieve future organizational objectives. Emphasis is on forecasting internal labor supply and demand; programming to meet objectives; and, evaluation and control. Readings, research, discussion and lecture.

731 (formerly BUAD 763) Seminar in Labor Management Relations (3:3:0). Prereq MGMT 610 (formerly BUAD 660). The U.S. labor movement and its present political-economic status. Legal environment surrounding labor relations and recent rulings by regulatory bodies. Executive orders and political forces influencing unions in the public sector. Emphasis on negotiations and administration of labor contracts at the local level.

741 (formerly BUAD 765) Strategic Planning and Control (3:3:0). Prereq MGMT 610 (formerly BUAD 660). Theories and applications of modern strategic planning and control. Strategic decision making within the supportive framework of a strategic planning system. Emphasizes the methodological "how to do it" aspects of strategic decision making, programming, and control. Lecture, readings, discussion, case analysis, and projects.


761 (formerly BUAD 565) Management of Research and Development (3:3:0). Prereq MGMT 610 (formerly BUAD 660) and ECON 602 or PoD. Study of management concepts in R & D, incl examination of selected international practices (e.g., Japan, West Germany, etc.) and possible adaptation, recognizing cultural differences. Emphasis on the incentives and disincentives for R & D climate and the organizational and management techniques which affect R & D performance. Economics affecting R & D programs, role of government and universities in industrial R & D activities.

771 (formerly BUAD 766) Business in its Social Environment (3:3:0). Prereq BUDE 610 (formerly BUAD 650) and MGMT 610 (formerly BUAD 660). An examination of contemporary organizational management reflecting economic, social, political, and technological public policy concerns. Management issues treated include disclosure, governance, ethical behavior, employee citizenship rights, working life, governmental relations and political involvement, health, safety and the environment.

781 (formerly BUAD 778) Seminar in Comparative Business Management (3:3:0). Prereq MGMT 610 (formerly BUAD 660). Comparative analysis of business practices and management systems in different economic, social, and political systems. Generic characteristics of management and business enterprises as modified in varying environments.


796 (formerly BUAD 796) Independent Study and Directed Readings (3:0:0). Prereq Foundation and core courses. By special arrangement with professor and approval of the Management Chair.

797 (formerly BUAD 797) Business Policy (3:3:0). Prereq 27 grad sem hr beyond foundation course work. Examines entrepreneurial functions in business; determination of the field of business in which the firm will operate, its goals, corporate strategy to reach these goals, and major policies to implement the corporate strategy.

798 (formerly BUAD 798) Seminar in Business Research (3:3:0). Prereq 30 grad sem hr beyond foundation course work. Study of research design plans, methodologies, data collection and analyses and their application to business research projects. Students prepare a written report covering an approved research topic in a specialty area.

799 (formerly BUAD 799) Thesis (6:0:0). Prereq 30 hr of grad course work beyond the foundation.

Marketing Courses (MKTG)

610 (formerly BUAD 620) Marketing Concepts and Processes (3:3:0). Prereq ECON 602, ACCT 610 (formerly BUAD 600), DESC 610 (formerly BUAD 640), or equiv. Decision making in the marketing areas of product development, pricing, promotion, and physical distribution. Emphasis on analysis of marketing situations and on data-based decision making.

611 (formerly BUAD 621) Cases in Managerial Marketing (3:3:0). Prereq MKTG 610 (formerly BUAD 620) or equiv. The application of qualitative and quantitative techniques in approaching various marketing situations. Emphasis on use of marketing research, product planning, pricing and target market determination. (See School of Business Administration, Special Regulations.)

722 (formerly BUAD 722) Marketing Seminar (3:3:0). Prereq MKTG 611 (formerly BUAD 621) or equiv. Advanced study of contemporary marketing. Developing new market segments, independent research projects, and computer marketing games.

724 (formerly BUAD 724) Promotional Strategy in Marketing (3:3:0). Prereq MKTG 611 (formerly BUAD 621). Promotion activities as applied to both profit and nonprofit organizations. The approach is to develop basic issues in promotional strategy, then to focus on managerial issues and problems as encountered by promotion executives.

725 (formerly BUAD 725) Marketing Research (3:3:0). Prereq MKTG 611 (formerly BUAD 621) and DESC 611 (formerly BUAD 641). Concepts, theories, principles, techniques, and models underlying the marketing research process.

726 (formerly BUAD 726) Advanced Consumer Behavior (3:3:0). Prereq MKTG 611 (formerly BUAD 621). Advanced study of the concepts and propositions that comprise consumer decision processes. Examination of extant literature and research applications for marketing strategy and public policy are stressed. Lecture and case analysis.

727 (formerly BUAD 727) Purchasing and Materials Management (3:3:0). Prereq MKTG 611 (formerly BUAD 621). Principles and practices of purchasing and materials management for the private firm, within the broader context...
of an industrial materials management system. Governmental procurement practices examined to a limited degree.


796 (formerly BUAD 796) Independent Study and Directed Readings (3:0:0). Prereq Foundation and core courses. By special arrangement with professor and approval of the Marketing Chair.

799 (formerly BUAD 799) Thesis (6:0:0). Prereq 30 hr of grad course work beyond the foundation.

Real Estate and Urban Development Courses (REUD)

582 (formerly BUAD 680) The Real Estate Process (3:3:0). Prereq ECON 103, 104, or 602. Institutional background of real property; economics of urbanization, supply and demand; building industry, real estate credit, cyclical fluctuation, rents and prices, real estate market analysis, city growth, structure and planning, land use control, urban redevelopment and real estate investment analysis. Students will develop analytical skills involving the use of the microcomputer and appropriate software.

583 (formerly BUAD 581) Residential Property Development and Management (3:3:0). Prereq REUD 301 or REUD 582 (formerly BUAD 680). Business of creating housing incl strategy, market and merchandising trends, legal and political constraints, site selection, social implications, design and construction procedures and financial analysis and control for single family subdivisions, multifamily projects and new towns. Students will develop analytical skills involving the use of the microcomputer and appropriate software.

584 (formerly BUAD 582) Commercial Property Development and Management (3:3:0). Prereq REUD 301 or REUD 582 (formerly BUAD 680). The business of creating industrial and commercial real estate, incl office space, shopping centers, recreation facilities, and specialized commercial properties. Incl feasibility and market studies, design and construction, location analysis, site selection, and financial analysis. Students will develop analytical skills involving the use of the microcomputer and appropriate software.

782 (formerly BUAD 780) Urban Development and Land Use (3:3:0). Prereq REUD 301 or REUD 582 (formerly BUAD 680) or Pol. Urban growth and process of change characterizing urban development. Incl factors in socio-economic change, locational interdependence and consumer preferences. Students will develop analytical skills involving the use of the microcomputer and appropriate software.

782 (formerly BUAD 780) Urban Development and Land Use (3:3:0). Prereq REUD 301 or REUD 582 (formerly BUAD 680) or Pol. Urban growth and process of change characterizing urban development. Incl factors in socio-economic change, locational interdependence and consumer preferences. Students will develop analytical skills involving the use of the microcomputer and appropriate software.
Computer and Electronics Engineering

Faculty

Baraniecki, A.Z., Ph.D., University of Windsor, 1980; Assistant Professor

Black, W.M., Ph.D., Pennsylvania State University, 1971; Associate Professor

Bourbakis, N.G., Ph.D., University of Patras, 1982; Assistant Professor

Ceperley, P.H., Ph.D., Stanford University, 1978; Associate Professor

Chang, S.C., Ph.D., University of Hawaii, 1977; Associate Professor

Eldib, H.K., Ph.D. Candidate, University of Virginia; Assistant Professor

Kruppa, W., Ph.D., The Ohio State University, 1969; Associate Professor

Mouchahoir, G., Ph.D., Georgia Institute of Technology, 1968; Associate Professor

Mulpuri, V.R., Ph.D., Oregon State University, 1985; Assistant Professor

Schaefer, D., B.S., Tulane University, 1949; Associate Professor

Computer and Electronics Engineering, M.S.

The Master of Science in Computer and Electronics Engineering program, offered by the Department of Electrical and Computer Engineering, is designed to provide those with a baccalaureate degree in an area related to electrical engineering additional education at the graduate level. Students studying for the master's degree may specialize in such areas as computers, communications, controls and robotics, microelectronics, and signal processing. Specific areas of research at GMU are the analysis and design of microprocessor systems, spatially parallel processing, signal processing, and communications devices and circuits.

The courses in this program are being offered during the evening or late afternoon hours to permit persons who are employed full-time to enroll in the program. For those who wish to enter the program on a full-time basis, some financial aid may be available in various forms such as assistantships, research grants with a project conducted at the University, work-study, or co-op agreements with local industry.

Students may avail themselves of course opportunities through the Cooperative Graduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree Program. Refer to the section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Admission Requirements

Students are normally admitted in the "degree" category if they meet the following requirements:

1. An earned baccalaureate degree from an accredited institution of higher education. The field should be related to electrical engineering. The student is expected to have some prior training in the areas of digital and linear electronics, mathematics through differential equations and transform theory, computer architecture, and programming

2. A 3.00/4.00 grade point average or better in the last two years (at least 60 semester hours) of undergraduate study

3. Submitted official transcripts, three letters of recommendation, and all other documents required by the Graduate School.

Students not meeting all of the above requirements may be admitted under the "provisional" category, provided there is sufficient evidence to suggest the capacity to pursue graduate work. The provisional status may be changed to degree status in one of the following ways:

If the student does not have adequate preparation in the areas listed in point 1 above, specific undergraduate core courses must be taken and completed with a B average or better. The courses corresponding to the areas listed are the following:

- Circuit Theory
- Digital Electronics
- Linear Electronics
- Mathematics
- Computer Architecture
- Computer Programming

In addition to the above areas, the student must display some competence in the areas of communications, controls, and semiconductor device theory before being granted the master's degree.
The specific undergraduate courses corresponding to these areas are the following:

Control Theory ENGR 421
Device Theory ENGR 430
Communications ENGR 460

If the student has no background in these areas, he or she will be required to complete the corresponding courses with a B average or better before being granted the master's degree.

If a student has provisional status only because of a low grade point average, then after completing at least 12 credit hours of graduate work with a B average or higher and meeting any other academic requirements, the student will receive degree status.

Acceptance to the degree program will be based on an assessment of the capacity of the applicant to pursue the graduate program based on factors such as the undergraduate record and professional work experience. Although the Graduate Record Examination (GRE) is not required at present, past test results will be used as an additional measurement of the applicant's qualifications. Students from non-English-speaking countries are required to demonstrate proficiency in English via the TOEFL Exam, achieving a score of 550 or higher. For additional details concerning admission, please contact the Graduate School Office (703) 323-2105.

With the approval of the department, graduate students may transfer up to six semester hours of graduate credit earned at other accredited institutions prior to acceptance and enrollment in the George Mason University Graduate School. Up to a total of 12 semester hours of credit may be transferred from the University of Virginia or Virginia Polytechnic Institute and State University as part of the Northern Virginia Cooperative Graduate Engineering Program. These courses must have the prior approval of the Department of Electrical and Computer Engineering.

Degree Requirements

The candidates for the degree must successfully complete the following three requirements:

1. Two required courses chosen from the following core courses (6 hours):
   - ENGR 520 Electronic System Analysis
   - ENGR 521 Modern Systems and Control Theory
   - ENGR 528 Random Processes in Electrical and Computer Engineering
   - ENGR 540 Computer Engineering: Operating

2. Option A—ENGR 798 Master's Research Project (3 hours), plus seven elective graduate-level computer and electronics engineering courses (21 hours).

3. The student must pass a comprehensive examination before being granted the master's degree. This examination will cover one major and one minor area of specialization. The student may choose two of the following four areas specifying his or her major and minor.
   - a. Computers
   - b. Electronics
   - c. Communications and Signal Processing
   - d. Controls and Robotics

The Master's Research Project is designed to permit the student to conduct research under the guidance and approval of a faculty adviser. In some cases, permission may be granted to complete the work itself at the student's place of employment. The final product of the work is to be a technical research report which is approved by the adviser. The Master's Research Project (ENGR 798) is expected to be finished in one semester. In extenuating circumstances, the course may be repeated once to complete the project; however, only three credits may be applied toward the degree.

The second option requires a master's thesis, which involves a more significant research effort. The work is to be conducted under the guidance of a faculty adviser, and the final written thesis and oral defense of it are to be approved by a three-member faculty committee. The thesis work is expected to be completed while taking ENGR 799, Master's Thesis Research, only twice. In no case may the course ENGR 799 be taken more than four times; however, only six credits of it may be applied toward the degree.

Computer and Electronics Engineering Courses (ENGR)

   Prereq: MATH 213, MATH 303, MATH 351—Not open to
Electrical and Computer Engineering students. Fundamental and advanced techniques for system analysis; review of Fourier series and integral; convolution, correlation, power spectrum, bandwidth; communication systems and modulation techniques; sampling and quantization; discrete-time signals and systems, Z-transform; Discrete Fourier Transform and FFT algorithms; analysis and design of digital filters.

511 Microprocessors, Microcomputers, and Applications I (3:3:0). Prereq ENGR 445 or equivalent. Introduction to microprocessors and microprocessor-based computer systems. Analyzing and understanding microprocessors from the scientist’s and engineer’s point of view with their immediate applications. The emphasis is divided between hardware and software aspects of microcomputer systems. The course requires some hands-on experience with microcomputer systems.

512 Microprocessors, Microcomputers, and Applications II (3:3:0). Prereq ENGR 511 or equivalent. A second course in microprocessors with emphasis on microcomputer–controlled systems, interfacing techniques, and related subjects. Topics include basic input-output, interfacing the peripheral analog circuitry, multiplexers, POS systems, process control with microcomputers, microcomputers for communications, 16-bit microprocessors.

516 Sixteen–Bit Microprocessors (3:3:0). Prereq ENGR 511, ENGR 512, or equivalent. A study of the most popular 16-bit microprocessors such as the Motorola 68000, Intel 8086, Zilog 28000. Topics include internal architecture, data paths, busses, instruction sets, input/output, and interfacing.

520 Electronic Systems Analysis (3:3:0). Prereq ENGR 331, 333, MATH 313, or equivalent. A study of basic and advanced methodologies for analyzing electric circuits and systems. Topics include continuous and discrete time systems, Laplace, Fourier, and Z-transform techniques, continuous and discrete convolution, feedback analysis, stability concepts, frequency response techniques, and state variables.


522 Computer Control Systems (3:3:0). Prereq ENGR 421, ENGR 520, or Pol. Theory and industrial applications of the use of computers in analysis, design, and implementation of feedback control systems. Topics include modeling of systems and signals, computer–aided design, optimal design methods, digital controllers, adaptive control, and introduction to computer–aided manufacturing and robotics.

528 Random Processes in Electrical and Computer Engineering (3:3:0). Prereq ENGR 460, MATH 351, or equivalent. Topics include random signals and noise in communications, stationary and ergodic random processes, spectral analysis, Gaussian processes, Brownian motions, mean square estimation, Kalman and adaptive filtering, Markov processes and Poisson processes. Applications are drawn from computer, communication, control, and signal processing.


540 Computer Engineering: Design Principles, Operating Systems, and System Development (3:3:0). Prereq ENGR 441, ENGR 445, CS 311, or equivalent. A study of general design principles of computer systems, the operating system of various types of computers such as PDP–11, CDC Cyber, etc., selected topics of software engineering, the design of systems with specific applications, microprogramming, and computer networks.


563 Microwave Theory (3:3:0). Prereq ENGR 513 or Pol. Study of the generation, control, and propagation of microwave signals. Topics include: transmission lines, waveguides, resonators, scattering parameters, Smith charts, measurement techniques, instrumentation, and microwave devices.

565 Introduction to Optical Electronics (3:3:0). Prereq PHYS 352, 305, and either ENGR 286 or MATH 313. An introduction to optical systems for information gathering, transmission, storage, and processing. Topics include introduction to lasers, solid–state detectors, and optical fibers; variety of optical sensors, imaging and non–imaging; optical data storage techniques and optical signal processing; optical communications.

571 Network Analysis (3:3:0). Prereq ENGR 520 or Pol. A study of linear active and passive networks. Topics include graph theory, network properties, scattering parameters, frequency and time domain representation, sensitivity measures, Tellegen’s theorem, and computer–aided design.

584 Solid–State Device Theory I (3:3:0). Prereq ENGR 430 or
586 Digital Integrated Circuit Analysis and Design (3:3:0). Prereq ENGR 331, ENGR 430, or Pol. A study of the devices and circuit topologies used in digital integrated circuits. Topics include large signal active device models, MOS and BJT gates, regenerative logic circuits, semiconductor memories, LSI and VLSI circuits.

587 Analog Integrated Circuit Analysis and Design (3:3:0). Prereq ENGR 333, ENGR 430, or Pol. A study of the devices and circuit topologies used in analog integrated circuits. Topics include active device models, fabrication technology, operational amplifiers, frequency response, noise, and computer-aided design.

620 Optimal Control Systems (3:3:0). Prereq ENGR 521, or Pol. A detailed treatment of optimal control theory and its applications. Topics include: System dynamics and performance criteria, the calculus of variations and Pontryagin’s minimum principle, computational methods in optimal control, and applications of optimal control.

621 Stochastic Control Systems (3:3:0). Prereq ENGR 521 and ENGR 528, or Pol. A detailed treatment of stochastic control theory and its applications. Topics include: State space models with random inputs, optimum state estimation, Kalman Filtering, Linear Quadratic Gaussian problem, computational issues, stochastic dynamic programming, applications in process control and in decision making under uncertainty.

622 High-Frequency Electronics (3:3:0). Prereq ENGR 305, ENGR 433, ENGR 520, MATH 313, or Pol. A study of devices and circuits used in high-speed communications systems. Topics include microwave bipolar transistors, GaAs MESFETs, and high-speed integrated circuits; the design of linear and power amplifiers using S-parameter techniques and computer simulation.

630 Statistical Communication Theory (3:3:0). Prereq ENGR 528 and ENGR 530. This course is an introduction to optimum receiver design in the additive white Gaussian noise environment. Topics include: efficient signal set design, modulation techniques, matched filter, correlation detector, coherent and noncoherent detections, fading and diversity channels, random amplitude and phase, diversity techniques, performance bounds of communications, and waveform communications.


632 Information Theory (3:3:0). Prereq ENGR 530 of Pol. Comprehensive study of information with emphasis on concepts of reliable, efficient communication systems. Measure of information, efficient representation of message sources, communication channels and their capacity. Coding for reliable transmission over noisy channels.


634 Detection and Estimation Theory (3:3:0). Prereq ENGR 630. This course is an introduction to detection and estimation theory with communication applications. Topics include M-hypotheses, Bayes, minimax, Neyman-Pearson criterion, detection of signals in AWGN and ACGN, Bayes estimations, ML estimations of signal parameters in AWGN and ACGN, estimations of Gaussian waveforms in Gaussian noise, linear MSE estimations, Kalman and Wiener filters.


639 Satellite Communication (3:3:0). Prereq ENGR 631 or Pol. Introduction to the theory and applications of modern satellite communications. Topics include satellite channel characterization, channel impairments and transmission degradation, link calculations, modulation, coding, multiple access, broadcasting, random access schemes, demand assignment, synchronization, satellite switching and onboard processing, integrated satellite service, satellite networks, and satellite transponder, ground stations, protocol switching, optical satellite communications.

640 Spatially Parallel Computers (3:3:0). Prereq ENGR 540 or Pol. Topics include basic concepts of parallelism, two-dimensional computation schemata, types of intercommunication networks between processing elements, single instruction stream–multiple data stream computers, computers with “massive parallelism”, multiple instruction stream–multiple data stream computers, and parallel processing of images.

642 Design and Analysis of Computer Communication Networks (3:3:0). Prereq ENGR 542 and ENGR 528 or equivalents. This course is an introduction to queuing theory. Other topics include: concentrator design, multiplexing, capacity assignments, random access schemes, polling and probing techniques, topology design, flow control and routing, packet radio, protocol specification, and validation.

644 Computer Image Processing (3:3:0). Prereq ENGR 535, ENGR 540. Concepts and techniques of computer analysis and processing of pictorial information. Topics: image formation and perception, computer representation of images, image scanning techniques, image data structures, image detection–extraction and reconstruction, image data compression (reduction), orthogonal transformations of images, scene understanding, image applications.

850 Robotics I (3:3:0). Prereq ENGR 521. An introduction to the fundamentals of robotics from an electrical engineering hardware standpoint. Topics include machine vision, sensing, and mobility.
651 Robotics II (3:3:0). Prereq ENGR 521 and ENGR 650, or Pol. An introduction to theoretical aspects of robotics. Topics include: modeling, motion planning, and control of robot manipulators, elements of robot control systems, as well as an introduction to advanced control techniques such as adaptive control, optimal control, and distributed control of robot systems.

663 Antennas and Propagation (3:3:0). Prereq ENGR 513 or Pol. Study of the electromagnetic antennas and the waves which radiate from them. Topics include: types of antennas and their characterization, radiative E-M fields, transmission loss, propagation near and around obstacles, and phased arrays.

665 Optical Signal Processing (3:3:0). Prereq ENGR 565. This course covers optical systems for processing temporal signals as well as images. Topics include use of coherent optical systems for image processing and pattern recognition, principles of holography, acousto-optic systems for radar-signal-processing optical computers.

680 Introduction to VLSI Principles (3:3:0). Prereq ENGR 584, ENGR 586, or Pol. A study of physics and modeling of various semiconductor devices and fundamental building block circuits that are extensively used in VLSI design. The topics include review of MOSFETs and BJTs, SPICE device modeling, inverter and logic circuits, logic minimization, PLA implementation, static and dynamic RAM and problems in VLSI.

744 Computer Vision and Expert Systems (3:3:0). Prereq ENGR 644, ENGR 511. General computer vision systems subjects such as hierarchical, distributed, and classical computer vision systems will be taught. Also, an introduction to the expert system with emphasis on the text processing systems will be given.

Computer and Information Sciences

Faculty

Baum, Richard F., Ph.D., University of Michigan, 1969; Associate Professor

DeJong, Kenneth A., Ph.D., University of Michigan, 1975; Associate Professor

Fife, Dennis W., Ph.D., University of Michigan, 1965; Associate Professor

Gerasch, Thomas E., Ph.D., University of Wisconsin, 1977; Assistant Professor

Gonzalez, Carlos M., Ph.D., Case Western Reserve University; Assistant Professor

Hamburger, Henry J., Ph.D., University of Michigan, 1971; Associate Professor

Koll, Matthew B., Ph.D., Syracuse University, 1979; Assistant Professor

Muller, Mervin E., Ph.D., University of California, Los Angeles, 1954; Professor

Norris, Eugene M., Ph.D., University of Florida, 1969; Associate Professor

Rine, David C., Ph.D., University of Iowa, 1970; Professor

Seidman, Stephen B., Ph.D., University of Michigan, 1969; Associate Professor

Sibley, Edgar H., Sc.D., Massachusetts Institute of Technology, 1967; Professor

Siff, Frederick H., Ph.D., New York University, 1974; Associate Professor

Tuan, Tai-Ching, M.S., National Tsing Hua University, 1978; Acting Assistant Professor

Wang, Pearl Y., Ph.D., University of Wisconsin, 1980; Assistant Professor

Wang, Shyuan, Ph.D., Virginia Polytechnic Institute and State University, 1983; Assistant Professor

Computer Science, M.S.

The master of science in computer science, offered by the Computer and Information Sciences department, is a program designed for those individuals who are involved or wish to become
involved in the expanding field of computer technology. Graduates will have the necessary professional training to enable them to design, analyze, implement, operate or manage sophisticated computing systems and to interact professionally with systems engineers and information specialists. The program encompasses the depth of knowledge needed to pursue more advanced work in computer science or allied areas. The major academic computing capability at the University will be provided by a CDC Cyber 170/730 dual CPU and a Cyber 835 running UNIX. The CIS Laboratory has two HP/1000 Computers and a PDP-11/44 for use by students and faculty. Several microcomputer laboratories and a graphics facility are available as well.

Classes are offered primarily in the late afternoon and evening to accommodate the working student. Financial aid in the form of graduate assistantships may be available for full-time students.

Students may avail themselves of course opportunities through the CooperativeGraduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree Program. Refer to section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

**Admission Requirements**

A student seeking admission to this program will be expected to satisfy the following requirements:

1. Fulfill all admission requirements of the Graduate School of George Mason University

2. Hold a baccalaureate degree including those courses or their equivalents in practical experience comprising the body of knowledge which is commonly held to be preparatory for continued study in computer science. These include courses in Data Structures and Algorithms (CS 211, 212), Assembly Language Programming (CS 311) and Computer Architecture (CS 365). In addition, the student should have completed one year of mathematics beyond first-year calculus including a substantial course in discrete mathematics (Math 305). A student with deficiencies in preparation may be admitted provisionally pending completion of the foundation courses in mathematics or computer science deemed necessary to remove those deficiencies. Remediation will be completed before the student is admitted to courses required for the master's degree and will be in addition to the 33 credit-hour degree requirement.

3. Have an undergraduate cumulative grade-point average over the last two years of 2.75, preferably with a major in a technical field such as computer science, mathematics, physics, or engineering

4. Submit transcripts of all post-secondary education, three letters of recommendation, and an official GRE (Graduate Record Examination) report showing verbal and quantitative scores. A minimum combined score of 1,000 is normally required. An applicant who has not completed all the prerequisites may be admitted provisionally pending removal of those prerequisites. Undergraduate credit earned in this way may not be applied toward the degree.

**Degree Requirements**

In addition to the general requirements of the University, completion of this program requires:

1. Completion of 33 hours of graduate course credit, including the following:
   a. Nine hours comprising the courses–
      - CS 540 Language Processors
      - CS 571 Operating Systems
      - CS 583 Data Structures and Analysis of Algorithms
   b. Twelve or more hours of computer science courses at the 600 level or above
   c. Three hours of project work or three to six hours of thesis for a total of not more than six hours (The thesis is recommended for students who anticipate entering a doctoral program.)
   d. Additional graduate-level courses in computer science or in closely related fields, chosen in consultation with the adviser.

2. Presentation of the student’s project or thesis at an appropriate forum, approved by the department graduate committee; and comprehensive examination.

**Course Work**

The department offers computer science courses in the general areas of theory of computation, language and compilers, data bases, systems, and intelligent systems. A complete list appears below and is available from the department by request.
Information Systems, M.S.

The master of science in information systems is a rigorous program in the modern field of computer-based information systems technology. Offered by the Computer and Information Sciences department, it is designed for baccalaureate degree holders from a variety of disciplines who wish to pursue careers in this vital field. Technical, managerial, and user-interface aspects of information systems are considered within applications environments for both the private and the public sectors. A graduate of this program will be able to pursue a career in systems analysis and design, in general data processing and in managing the operations of a computer-based management information system. Through elective courses, the M.S.I.S. student may also acquire skills in using management science tools in information systems and decision support systems, graphics, robotics, human factors, and simulation. With its emphasis on the design, development, and management of human-engineered information systems, this program complements the University's other degree programs such as the M.B.A. degree and the Master of Science in Computer Science.

The interests of the Computer and Information Sciences faculty encompass the major fields of information systems and management science. In information systems, activities include data base management systems, human factors, information display, management of computer resources, information retrieval systems, data communications and distributed processing, decision support systems, simulation, and data and language structures.

All courses are scheduled in the late afternoon or evening to permit individuals who are employed full-time to enroll in the program. For those who wish to study in the program on a full-time basis, financial aid may be available in the form of graduate assistantships.

Students may avail themselves of course opportunities through the Cooperative Graduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree Program. Refer to section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Admissions Requirements

In addition to fulfilling the admission requirements for the Graduate School, an applicant for the M.S. in information systems should meet the following minimum admission requirements:

1. A bachelor's degree from an accredited institution (No application is processed until all official transcripts are forwarded from the institutions attended.)

2. A grade-point average of 2.75 on a 4.00 scale for the last 60 semester hours of upper-level course work, with a grade of C or better in courses applied against the foundation requirements or with exceptional compensatory qualifications (A letter explaining any such exceptional qualifications should be included with the application, if appropriate.)

3. Three letters of recommendation from professors or other persons directly knowledgeable of the applicant's professional and academic competence

4. A satisfactory score (normally 500 or higher) on the Graduate Management Admission Test (GMAT) (The GMAT should have been taken within five years of applying for admission.)

5. The Computer and Information Sciences faculty will accept students to the M.S.I.S. program for the Fall and Spring terms only.

Admission to the M.S. in information sciences degree program is on a competitive basis.

Degree Requirements

The master's program in information systems is principally grounded in the major disciplines of business administration, which provide a broad background to enable the graduate to fully participate in the application of information systems to the full systemic needs of an organization. Every student must fulfill the courses in the business curriculum's common body of knowledge, found in most undergraduate programs in business administration. A student who is deficient in any of these courses may apply to the M.S. in information science program; upon admission, the student will be advised of the appropriate foundation courses to be passed to satisfy this requirement. These foundation courses, offered at the graduate level, may be taken concurrently with INFS courses.

ECON 602 Economic Analysis (offered by the Economics Dept.) (3)
FNAN 610 (formerly BUAD 610) Financial Management (3)
Thus, the number of business foundation courses will range from 0 to 5, depending on the student’s background. The foundation courses DO NOT EARN CREDIT toward the MSIS degree.

**Required Course Work**

The total M.S. in information systems program requires 30 graduate semester hours (ten graduate courses).

**Core Courses**

To provide a common technical background in the fundamental areas of information systems, the following core courses are required of all students:

- INFS 690 Program Design and Data Structures
- INFS 710 Computer Architecture and Operating Systems
- INFS 711 Comparative Languages for Business Applications
- INFS 712 Data Communications and Distributed Processing
- INFS 714 Data Base Management Systems
- INFS 722 Information Systems Analysis and Design

**Elective Courses**

The student should consult with a faculty adviser in the selection of four elective courses. These courses may also be chosen from Graduate School curricula in information systems, computer science, and management science. A thesis option is available; a student may elect to complete a thesis for six hours of elective credit.

**Capstone Course**

The following capstone course is required of all students in their final semester:

- INFS 790 — Information Systems Policy and Administration

**Computer Science Courses (CS)**

- **531 Theory of Computation (3:3:0).** Prereq CS 311 and MATH 305; CS 331 strongly rec. Theory of computability: Turing machines, computable functions, recursive functions, unsolvable decision problems and Godel’s Incompleteness Theorem, computational complexity.

- **540 Language Processors (3:3:0).** Prereq MATH 305, CS 212 and 311. Basic programming language processors: assemblers, interpreters and compilers. Topics incl design and construction of language processors, formal syntactic definition methods, parsing techniques and code generation techniques. Lab incl actual construction of language processors.

- **550 Data Base Concepts (3).** Prereq CS 365, CS 370 is strongly recommended. Data models and data sublanguages for the relational, hierarchical and network approaches to database management systems. Normal forms. External models, implementation, data independence, alternative logical views of data. Comparison of approaches in the context of applications.

- **555 Data Communication Systems (3).** Prereq CS 365 or equiv. Techniques and systems for the communication of data between/among computational devices. Topics include the role of exchanges, concentrators, multiplexers, buffering; network analysis, cost and design; software considerations.

- **571 Operating Systems (3:3:0).** Prereq CS 468 and 365. Batch processing systems, Implementation techniques for parallel processing of input/output and interrupt handling. Multiprogramming and multiprocessing, Memory management, system accounting, interprocess communication and interfaces and dead locks.

- **580 Introduction to Artificial Intelligence (3:3:0).** Prereq CS 212 and MATH 305. Principles of representation, heuristic search and control in the context of specific intelligent systems in such areas as problem-solving, vision, medical diagnosis and natural language. The LISP programming language as a means of representation.

- **583 Data Structures and Analysis of Algorithms (3:3:0).** Prereq CS 212 and MATH 305. Math necessary to properly analyze the computational effort of a given algorithm. Specific algorithms analyzed and improved.

- **611 Introduction to Computers (3:3:0).** Intro to computer organization. BASIC and FORTRAN programming languages. Provides experience in interactive and batch processing modes. Primarily for individuals with no prior computer experience. Cr are not applicable toward the 30 cr req for the MS in mathematics nor CS, but may be applicable toward a degree in some other fields.

- **612 The Use of Computer Statistical Packages (3:3:0).** Prereq Course in statistics. Intro to use of computer packages in the statistical analysis of data. Emphasizes techniques common to use of all statistical packages, incl data checking, cleaning, manipulation and transformation. Both simple and complex statistical analyses are covered. Techniques are illustrated by concentrating on one of the major statistical packages such as SAS or SPSS. Other packages are discussed and compared. Students are expected to perform computer statistical analyses of data relevant to their respective fields of study. Cr are not applicable toward the thirty cr req for the M.S. in mathematics nor CS, but may be applicable toward a degree in some other fields.

- **640 Theory of Programming Language Translation (3:3:0).** Prereq CS 540. Programming language translation and concepts in compiler design. Topics incl formal grammars,
finite state automata as recognizers for finite state grammars, lexical scanning, context-free languages and push-down automata, context-free parsing techniques, runtime environments necessary to support language techniques of code generation. Students work on projects to demonstrate the various concepts and consult the current literature concerning recent advances in the theory and practice of programming language translation.

668 Microprogramming (3). Prereq CS 468 or a graduate course in systems programming. A thorough discussion of the hardware organization of a microprogrammable central processor. Assembly languages, instruction set modification, I/O programming, interrupt handling, DMA programming. Microprogram development. A substantial hands-on microprogramming experience using a dedicated laboratory computer system.

671 Computer Systems Theory (3). Prereq CS 571, MATH 351 or Pol. This course will introduce and develop computer system theory, including models and mechanisms of system structure and techniques of modeling and analysis.

680 Natural Language Processing (3:3:0). Prereq CS 580 or Pol. Principles of the design of computer programs that respond appropriately to questions, commands, and statements expressed in human language, particularly English. Role of knowledge representation and linguistic theory. Students are expected to become familiar with current literature to implement a limited natural language processor.

683 Analysis of Algorithms (3:3:0). Prereq CS 583. A second course on the analysis of algorithms. Topics include the analysis of several algorithmic strategies (such as greedy methods, divide and conquer strategies, dynamic programming, search and traversal techniques, approximation algorithms) as well as the analysis of specific algorithms falling into these classes, NP-Hard and NP-Complete problems.

697 Independent Reading and Research (1-3:0:0). Prereq grad stdg completion of at least two core courses (CS 540, 571, 583) and Pol. In areas of importance, but insufficient demand to justify a regular course an individual student may undertake a course of study under the supervision of a consenting faculty member. A written statement of the content of the course and a tentative reading list will normally be submitted by the student as part of the request for approval to take the course. A literature review, project report or other written product is normally required.

699 Advanced Topics in Computer Science (3). Prereq Pol. Special Topics in computer science not occurring in the regular computer science sequence will be presented in this course. The course may be repeated for credit if subject matters in distinct offerings of the course differ.

798 Project Seminar (3:3:0). Prereq 18 hr of cr applicable towards the MS in CS. Master's degree candidates undertake a project utilizing what they have learned in the M.S. program. Topics chosen in consultation with adviser. Project carried out intended to meet the project-thesis req for the M.S. in CS.

799 Thesis (3:6:0:0). Prereq 18 hr or cr applicable towards the M.S. in CS. Original or expository work is evaluated by a committee of three faculty members.

Information Systems Courses (INFS)

610 (formerly BUAD 630) Computer Systems for Management (3:3:0). Prereq grad stdg. Examination of computer information systems and their interrelations with management processes. Emphasis on management information system life cycle from manager's perspective. Lecture and computing lab, incl programming in BASIC. Fall, Spring, Summer.

690 (formerly INFS 600) Program Design and Data Structures (3:3:0). Prereq Acceptance into M.S.I.S. program or permission of instructor and INFS 610 (formerly BUAD 630). Study of the fundamentals of data structures and algorithms underlying system development. Stresses structured programming in a modern high-level language. Laboratory required. This is the first course in the M.S.I.S. program and a prerequisite for all other courses.


711 Comparative Programming Languages for Business Applications (3:3:0). Prereq INFS 710. Investigation of the variety of environments for computer applications to organizational and scientific problems. Selection of the appropriate computing language for a specific application is demonstrated through case studies. Examples of languages are PASCAL, COBOL, PL/I, FORTRAN, RPG, ADA. Computing lab.


714 Database Management (3:3:0). Prereq INFS 710. Generalized database management systems: their internal and external structure, development, implementation, management and use. Covers logical and physical database design and access methods. Several commercial systems are examined. Computing lab.

720 Systems and Information Analysis in Organizations (3:3:0). Prereq INFS 690. Analysis of information flow in organizations and the operating context of the various computer-based subsystems of an organizational information system. Fundamental concepts of systems and information are integrated with those of organizational structure and management. Cases and computing lab.

722 Information Systems Analysis and Design (3:3:0). Prereq INFS 714, with INFS 712 also recommended. Integration of computing technologies, systems analysis, system design practices and management criteria in the design of large scale information management and decision support systems. Cases and computing lab.
Conflict Management

723 Information Retrieval (3). Prereq INFS 714. This course examines information systems for textual and less well structured data bases; covering hardware, software and the design, implementation and evaluation of such systems. Laboratory (computer programming).

780 Technical and Administrative Issues in Office Automation (3:3:0). Prereq INFS 690 (formerly INFS 600) (may be taken concurrently). Examines office automation as an issue in applying the concepts of MIS in an organization. Focuses on technical issues of hardware and software selection as well as administrative problems associated with successful integration of the appropriate technologies. Lecture and major class project.

790 Information Systems Policy and Administration (3:3:0). Prereq Completion of all course work for the M.S. in Information Systems. Capstone course, integrates the technical and executive policy issues of information systems. Critical executive issues are examined through case studies and comprehensive individual project. Computing lab.

791 Special Topics in Group Project Design (3). Prereq INFS 690 and INFS 710 (may be taken concurrently). Study of techniques for managing a computer-based information systems design project. The student will select a project and prepare a detailed project plan with professional guidance. The plan developed in this course will be used in practice in the follow-on course, INFS 792.

792 Special Topics in Group Project Implementation (3). Prereq INFS 690, INFS 710, INFS 791. The student will study the various techniques for managing a computer-based information system design project. Using the project plan developed in INFS 791, the student will implement the project with undergraduate students enrolled in INFS 492 as group members.

796 Directed Readings. Prereq Grad degree students in Information Systems with at least 12 prior cr hr in INFS and CS courses. Research and analysis of a contemporary problem in information system development. Prior approval req by a faculty sponsor who will supervise the student's work. Written report or thesis proposal to be prepared.

799 Thesis. Prereq 18 hr of cr applicable toward M.S. in CS. Original or compilary work to be evaluated by a committee of three faculty members.

Faculty

Avruch, Kevin A., Ph.D., University of California at San Diego, 1978; Associate Professor

Barringer, Henry C., B.A., University of Michigan, 1942; Co-Director, Center for Conflict Resolution

Black, Peter W., Ph.D., University of California at San Diego, 1977; Associate Professor

Broome, Benjamin J., Ph.D., University of Kansas, 1980; Assistant Professor

Gittler, Joseph B., Ph.D., University of Chicago, 1941; Professor

Gortner, Harold F., Ph.D., Indiana University; 1971; Associate Professor

Hickey, Anthony A., Ph.D., Cornell University, 1975; Associate Professor

Horton, Lois E., Ph.D., Brandeis University, 1977; Assistant Professor

Sandole, Dennis, J.D., Ph.D., University of Strathclyde, Scotland, 1979; Associate Professor

Scimecca, Joseph A., Ph.D., New York University, 1972; Professor

Taylor, Anita, M.G.B., Ph.D., University of Missouri, 1971; Professor

Tullock, Gordon, Ph.D., University of Virginia, 1959; Professor

Tyer, Zita E., Ph.D., Texas Tech University, 1968; Professor

Wedge, Bryant, M.D., University of Michigan, 1945; Director, Center for Conflict Resolution

Williams, Thomas R., Ph.D., Syracuse University, 1956; Professor

Note: Faculty members teaching in the M.S. in Conflict Management graduate degree program constitute a Faculty Advisory Board that oversees administration and operation of the program. This board functions through committees on admissions, curriculum, associates, and special projects. The Center for Conflict Resolution in the Department of Sociology and Anthropology serves as a resource center, operates following policy established by the Faculty Advisory Board, and has no academic

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functions in the Conflict Management program. All students are assigned to a Graduate Program Adviser who then serves as the student's focal point for most administrative functions.

Conflict Management, M.S.

The administration and operation of this program is directed by an interdisciplinary Faculty Advisory Board, which reports to the Department of Sociology and Anthropology and to appropriate University officers at the college and university level. This curriculum is a two-year professional M.S. degree program designed to provide advanced training in the theories, concepts, methods, and application of conflict management skills. Students are trained to understand conflict and to be able to apply tested methods (e.g., conciliation, mediation, arbitration, and negotiation) in the management of conflict. Intensive classroom study is combined with practical work in laboratory, simulation, fieldwork, and internship courses. Nearly half the degree courses concern learning practical skills in conflict management. This degree program, the first to be offered in the United States, provides an opportunity for a professional career in the emerging discipline of conflict management through work and service in public and private organizations, institutional settings, firms, and agencies, and opportunities for professionals now engaged in conflict management work to further advance their knowledge and skills.

Admission Requirements

In addition to meeting all Graduate School requirements for admission, students in the Conflict Management program must have a GPA of no less than 2.75 in all undergraduate work; provide three letters of recommendation, one of which must be from a faculty member in the applicant's undergraduate major department; and write a brief essay stating their reasons for seeking admission to the program. Admission after January 1, 1985, is on an annual basis; students will be admitted only in the Fall semester of an academic year. If they are admitted in the odd-numbered year of the two-year degree program (e.g., 1985, 1987, 1989), they will be able to begin study only as part-time students; if they are admitted to study in an even-numbered year (e.g., 1986, 1988, 1990), they may begin their study as either full- or part-time students. Any part-time student may become a full-time student when program curriculum offerings make it possible. Approval of the Graduate Program Adviser is required for a change from part-time to full-time status. Effective January 1, 1985, all class enrollments in Conflict Management will require degree status; thus, students seeking to enroll through the Division of Continuing Education may not enroll in any CONF courses. Graduate students in other degree programs who seek to enroll in Conflict Management courses may enroll with the permission of the course instructor. There is an internship course requirement that is offered only in the Summer Session, following completion of the first year of full-time study. This course (CONF 694) will not be offered during other semesters. Students who plan to attend classes on a part-time basis will require a much longer period of time to complete the M.S. degree and should note that most courses will be offered only once in a two-year period. Applicants with a B.A. or B.S. degree should note that there are no substitutions permitted for courses offered in the M.S. curriculum in Conflict Management and no directed readings courses or class may be substituted for the required comprehensive examination. Since this is a professional program, all students applying for admission should not expect to substitute transfer credit for a course or requirement leading to the M.S. degree. Students with an M.A. or M.S. degree must complete all requirements for the M.S. degree in Conflict Management, including the comprehensive written and oral examinations. The Faculty Advisory Board directs the attention of all applicants to the statement, "Purposes of Graduate Study" found in the beginning of this catalog.

Degree Requirements

Each student is required to successfully complete (grades of A or B) all courses in the curriculum and a written and oral comprehensive examination. Four hours each day over a period of three days will be allotted to the written examination. The two-hour oral examination by a Conflict Management faculty committee will follow successful completion of the written examination.

Note: Directed reading and research courses (CONF 697) and the optional Master of Science thesis course (CONF 699) may not be substituted for the required written and oral examinations. The required courses are:

Semester I
CONF 610 Research Methods in Conflict and Conflict Management I: Quantitative Methodology (3)  
CONF 613 Laboratory and Simulation in Conflict Processes I (3)  
CONF 615 Conflict and Conflict Management: A Social Psychological Perspective (3)
CONF 616 Conflict and Conflict Management: Perspectives from Political Science (3)

Semester II
CONF 617 Research Methods in Conflict and Conflict Management II: Qualitative Methods (3)
CONF 618 Conflict and Conflict Management: Perspectives from Economics (3)
CONF 623 Laboratory and Simulation in Conflict Processes II (3)
CONF 624 Fieldwork in Cross-Cultural Conflict Processes I (3)

Summer Session
CONF 694 Internship in Conflict Management (3)

Semester III
CONF 611 Philosophical Foundations of Conflict and Conflict Management (3)
CONF 619 Conflict and Conflict Management: Perspectives from Sociology (3)
CONF 633 Laboratory and Simulation in Conflict Processes III (3)
CONF 634 Fieldwork in Cross-Cultural Conflict Processes II (3)

Semester IV
CONF 620 Conflict and Conflict Management: Perspectives from Law and Jurisprudence (3)
CONF 625 Conflict and Conflict Management: Perspectives from Cultural Anthropology (3)
CONF 641 Conflict and Conflict Management: Integration of Knowledge I—Practical Applications of Techniques (3) CONF 642 Conflict and Conflict Management: Integration of Knowledge II—An Integrative Practicum (3)

Courses to be taken in any semester:
CONF 697 Directed Reading and Research (1–3). Independent reading on a specific topic related to conflict and conflict management agreed to by a student and a faculty member. The course may be repeated once. This course may not be counted as a substitute or replacement for any course required in the Master of Science in Conflict Management degree program, including the scheduled comprehensive examination (written and oral parts).
CONF 699 Optional Master’s Thesis (3–6). Open only to students who have successfully completed all requirements for the Master of Science in Conflict Management degree. May not be substituted for any required course or activity, including reading courses or the comprehensive examination. Suggested for students expecting to go on to the Ph.D. programs. Note: (1) There is no thesis requirement for completing the M.S. degree program in Conflict Management; however, students planning a Ph.D. program may elect to write a thesis. (2) There is no foreign language requirement for completing the M.S. degree program in Conflict Management; however, students planning to work professionally in areas requiring foreign language competency, or planning a Ph.D. program, may want to consider the merits of language studies while enrolled in the M.S. program.
Economics

Faculty

Alexeev, Michael, Ph.D., Duke University, 1984; Assistant Professor

Bennett, James T., Ph.D., Case Western Reserve University, 1970; Professor

Bloch, Howard R., Ph.D., Princeton University, 1964; Professor

Buchanan, James M., Ph.D., University of Chicago, 1948; Professor

Chung, Jae W., Ph.D., New York University, 1972; Associate Professor

Coelho, Philip R.P., Ph.D., University of Washington, 1969; Professor

Crain, W. Mark, Ph.D., Texas A & M University, 1976; Associate Professor

DiLorenzio, Thomas J., Ph.D., Virginia Polytechnic Institute and State University, 1979; Assistant Professor

Grier, Kevin, Ph.D., Washington University in St. Louis, 1984; Assistant Professor

High, Jack C., Ph.D., University of California at Los Angeles, 1980; Assistant Professor

Lavoie, Donald C., Ph.D., University of California, San Diego, 1972; Assistant Professor

Lee, Dwight, Ph.D., University of California, San Diego, 1972; Associate Professor

Levy, David M., Ph.D., University of Chicago, 1979; Assistant Professor

Phillips, Samuel H., Ph.D., University of Virginia, 1966; Professor

Reid, Joseph, Ph.D., University of Chicago, 1974; Associate Professor

Rowley, Charles, Ph.D., University of Nottingham, 1964; Professor

Tollison, Gordon, Ph.D., University of Virginia, 1969; Professor

Tullock, Gordon, J.D., University of Chicago, 1947; Ph.D., University of Virginia, 1959; Professor

Vanberg, Viktor, Ph.D., Universitat Mannheim, 1981; Associate Professor

Vaughn, Karen I., Ph.D., Duke University, 1971; Professor

Wiest, Philip R., Ph.D., University of Pittsburgh, 1976; Associate Professor

Williams, Walter E., Ph.D., University of California at Los Angeles, 1972; John M. Olin Distinguished Professor of Economics

Economics, M.A.

The master of arts in economics is designed to provide students with a strong foundation in economic analysis and the opportunity to apply this knowledge in specialized subject areas. The program is designed to serve:

1. Students with recent baccalaureate degrees who wish to become qualified for employment with public and private institutions that hire economists;

2. Individuals employed in business and government who desire to further their professional careers through graduate training in economics; and

3. Students who intend to continue toward a Ph.D. in economics.

Admission Requirements

In addition to the entrance requirements of the Graduate School, the applicant is expected to hold a baccalaureate degree in economics. Students with an undergraduate major in a field other than economics may be admitted if their record demonstrates sufficient background in economics and allied fields. MATH 108 or its equivalent is required for admission to degree status. Undergraduate deficiencies must be made up by completion of appropriate remedial work including intermediate macro- and microeconomic analysis, taken without graduate credit. Before admission to degree status, students must submit two letters of recommendation and satisfactory GRE scores. The GRE scores may be waived if an applicant holds a graduate degree in another field, or has completed 6 to 12 hours of graduate course work in nondegree status or Extended Studies enrollment with a GPA of at least 3.00. Applications for admission to the M.A. program for the Fall semester must be received by May 1 and November 1 for the Spring semester.
Degree Requirements

Students must meet departmental degree requirements for all M.A. students and specific requirements depending on which track (thesis or non-thesis) is chosen.

General Core Requirements (all M.A. students)

All students are required to complete 30 semester hours of graduate credit. There are two required core courses, micro- and macroeconomic theory (Econ 511 and Econ 515). Up to 21 hours of elective courses may be taken. Electives may be chosen from several areas, including public choice, public finance, labor economics, industrial organization, international trade, resource economics, environmental economics, urban economics, Austrian economics, economic history, history of economic thought, and monetary economics. In some cases, departmental permission will be given to substitute up to six hours of electives taken outside the economics department in closely related fields.

All students are required to pass comprehensive examinations in micro- and macroeconomic analysis. The exams are offered twice a year, usually in September and April, and are normally taken immediately upon completion of the core courses.

Non-Thesis Track

The non-thesis track carries an additional three-hour core course requirement in econometrics (Econ 537).

Thesis Track

The thesis track offers up to six hours of graduate credit for independent research and writing under the direction of a departmental supervisor in lieu of elective classroom hours. This means that the student who chooses the thesis track may receive 18 hours of credit for electives and 6 hours of credit for thesis research (Econ 796 or Econ 799). Normally a student selecting the thesis track would choose a topic in an area related to the current elective courses.

Economics, Ph.D.

The Ph.D. in economics provides rigorous training in the discipline. There is a common core of courses taken by all candidates for the degree, with a wide variety of field specialization options once the core requirements are completed. Core courses include micro and macro theory, econometrics, mathematical economics, economic history, and history of economic thought. Our graduates will be familiar with the state and frontiers of the discipline and will be capable of carrying on substantive research programs of their own.

Recognizing the special character of students in this area, our Ph.D. program has two tracks. The traditional track prepares students for a career in economic research in government, business, or in universities. The applied track places a heavy emphasis on public policy and is especially suited for upper-level government workers who deal extensively with economics on the job. It also fits the requirements of those who envisage a career in the private sector or academic employment in programs heavily oriented toward administration.

Admission Requirements

Prerequisites for admission into the doctoral program in economics include an undergraduate degree from an accredited institution with a 2.75 GPA or higher the last two years of that baccalaureate program, 3.00 or higher GPA in undergraduate economics courses and training in economics at least through the intermediate level of micro- and macroeconomic theory. An applicant is also required to have an adequate background in mathematics, through calculus and in statistics. A student without these prerequisites will be required to take ECON 306 and 311 (the undergraduate theory sequence), Mathematics 113 and 114 (calculus), Mathematics 109 and Decision Sciences 202 (statistics). The mathematics and statistics may be taken in the initial stages of the graduate program.

An application for the doctoral program must include undergraduate and graduate transcripts, two letters of reference and scores from the Graduate Record Examination, including both the general exams and the advanced exam in economics. In some cases GRE scores may be waived at the written request of an applicant who has earned an M.A. degree in economics.

Applications for admission to the program for the Fall Semester must be received by April 1 (February 1, if financial aid is desired) and October 1 (September 1, if financial aid is desired) for the spring semester.

Degree Requirements

The Ph.D. degree in economics is not granted automatically upon completion of a set of course
requirements. It is granted only to candidates who have shown a thorough knowledge of economic theory and of his/her fields of concentration and have demonstrated the ability to conduct sound independent research. A minimum amount of course work with satisfactory performance, however, is necessary to demonstrate this level of scholarship.

A doctoral student must complete 72 credit hours, including a minimum of 48 credit hours of coursework and up to 24 hours of dissertation credit on an approved research topic. In order to ensure the high standards adopted by the Economics Department for its doctoral program, students will be required to take a set of core courses in theory, quantitative techniques, the development of economic thought and economic history.

Each doctoral student is required to take six credit hours in graduate microeconomic theory (Econ 511, 712) and six credit hours in macroeconomic theory (Econ 515, 716). Three credit hours in mathematical economics (Econ 530) and three credit hours in econometrics (Econ 537) are required to ensure adequate training in quantitative methods. Each doctoral student is also required to take three credit hours in the history of economic thought and three credit hours in economic history. In addition, a student taking the public policy track is required to take at least one course in public policy and political economy. A student is required to take a minimum of six credit hours of courses in each of the two specialization fields for which the student will write comprehensive exams. Up to six hours may be taken in coursework in other disciplines approved by the department. Transfer credits from accredited graduate programs in economics will be evaluated on a case-by-case basis.

Preparing for and passing comprehensive exams are an integral part of the Ph.D. program. General theory exams are used as a qualifying requirement for the Ph.D. In addition, Ph.D. candidates are required to take field exams that demonstrate professional competence in their two chosen areas of specialization. The general theory exams are given twice a year. The field exams will be scheduled according to course offerings and student interest in the particular specialized fields, but no more than twice a year.

The department will offer field exams in the following areas, although particular course sequences are still in the developmental stage:
- Public Choice
- Public Finance
- Economic History
- Political Economy
- Austrian Economics
- Monetary Theory and Policy
- History of Economic Thought
- Econometrics
- Labor Economics
- Economic Development
- Industrial Organization
- Urban and Regional Economics
- International Trade and Finance
- Resource and Environmental Economics

Core Requirements for the Economics Ph.D. (total 36 hours):
- Microeconomic Theory (6)
- Macroeconomic Theory (6)
- Mathematics for Economists (3)
- Statistics and Econometrics (3)
- Economic History and History of Thought (6)
- Public Policy (for Applied Track Only) (3)
- Field I (6)
- Field II (6)

In addition, the student must take 12 hours of electives to complete the required 48 hours of coursework. The dissertation must be completed within five years after passing the second part of the comprehensive exams.

Economics Courses (ECON)

Departmental Course Prerequisites

ECON 306 and 311, or equivalent, are prerequisites for all graduate courses except ECON 800 and 602. Additional prerequisites are noted. With permission of the instructor prerequisites may be waived.


523 American Economic History (3:3:0). Growth and development of the American economy as well as the evolution of economic institutions.

530 Mathematical Economics I (3:3:0). F. Topics incl set theory, function, differential calculus, integration, series and matrix algebra, with the special emphasis on the economic applications.

537 Econometrics I (3:3:0). Prereq MATH 109, DESC 202 or
Pol. Techniques of estimating relationships among economic variables. Intro to multiple regression and problems associated with the single equation model: autocorrelation, multicollinearity and heteroscedasticity.


600 Current Issues in Economics (3:3:0) (B). Prereq grad stdg or Pol. For students with little economic background. Topics incl supply and demand, operation of a free market system, stock and bond markets, and U.S. role in world economy. May be used in partial fulfillment of the course req in the teaching discipline for the master’s degree in education.


716 Macroeconomic Theory II (3:3:0). Prereq Econ 511, 515 and 535 or Pol. Aggregate economic activity and price levels with emphasis on dynamic models. Topics vary.


720 History of Economic Thought (3:3:0). Major figures in the history of economic thought and the tools of analysis they created; emphasis on classical, neoclassical, and Keynesian theories.

721 History of Economic Thought II (3:3:0). Development of economic analysis from the “marginal revolution” of 1877 to present. Emphasis on the development of neoclassical economic theory.

723 Topics in Economic History (3:3:0). Prereq ECON 511 and 515. Economics analysis of various historical epochs, such as: Industrial Revolution, Evolution of Political Reform, Rise of Unions, Growth of Government.


726 Political Economy and Public Policy II (3:3:0). Prereq ECON 511, 515 and 725 or Pol. Specific issues related to political economy of public policy. Topics incl privatization, political economy of deficit spending, regulation and deregulation, and the economics of rent-seeking.


728 Constitutional Economics (3:3:0). Prereq ECON 511 or Pol. Analysis of existing and proposed elements of the “economic constitution.” Emphasis on fiscal, monetary, transfer, and regulatory powers of government and on constitutional limits on such powers which have existed, especially in the United States. Also includes analysis of changes in these limits that have been proposed.

731 Mathematical Economics II (3:3:0). Prereq ECON 530 or Pol. Mathematical treatment of economic theories. Static and dynamic analysis of macro-models. Input-output analysis. Optimization techniques such as Lagrangian multipliers, linear programming, nonlinear programming, and game theory.

738 Econometrics II (3:3:0). Prereq ECON 537 or Pol. Econometric models and simultaneous equation systems. Identification of parameters and least squares bias; alternative estimation methods and block recursive systems.


751 State and Local Public Finance (3:3:0). Analysis of public spending and taxation at the subfederal level. Theory of public goods, positive and normative explanatory models of public expenditure determination, and intergovernmental fiscal relations. Problems in the provision of specific state and local services, incl education and police and fire protection.

752 Public Choice (3:3:0). Prereq ECON 511 or Pol. Application of economic theory and methodology to the study of nonmarket decision-making.

753 Special Topics in Public Finance (3:3:0). Prereq ECON 511 and 750. Topics vary; announced in Schedule of Classes.

754 Public Choice II (3:3:0). Prereq ECON 511 or Pol. This is the second course in the two course sequence in Public Choice. The Public Choice approach will be applied to study such topics as the causes and consequences of governmental growth, the behavior of public bureaucracies,
and the economic reasoning behind constitutional limitations on the size and growth of government.

755 Urban and Regional Economics (3:3:0). Prereq ECON 511, or Pol. Regional development and metropolitan growth economics incl the locational decisions of households and firms and problems associated with high density urban economic activity.

758 The Economics of Urban Transportation Planning (3:3:0). Issues and problems in urban transportation planning using various analytical techniques; planning for the future; techniques of evaluation, environmental and socioeconomic impact.

760 Resource Economics (3:3:0). Resource management in the public sector with emphasis on development of water resources. Problems of uncertainty, time horizon considerations, joint costs, multiple benefits, nonquantifiable benefits and costs.

761 Economics of the Environment (3:3:0). Analysis of economic models of ecosystems and pollutant discharges into the environment. Methods of improving economic efficiency; review of public policies.

765 Economic Development (3:3:0). Forces contributing to and retarding economic progress in developing countries. The role of foreign trade, economic integration, foreign investment, multinational corporations, and technological transfers.

770 International Trade and Policy (3:3:0). Classical, neoclassical and modern theories of international trade. A study of the theory and practice of world trade models such as project LINK. Analysis of foreign investment and economic growth, tariffs and nontariff barriers, and economic integration; recent developments with emphasis on natural resources. (May not be taken for cr by students who have completed ECON 590.)

771 International Monetary Economics (3:3:0). Examination of the international adjustment mechanism, price and income effects, controls and the monetarist approach. Development of the international monetary system, the demand for international reserves, capital movements, and the role of the International Monetary Fund. (May not be taken for cr by students who have completed ECON 590.)

772 Managerial Economics (3:3:0). Prereq ECON 602 and BUAD 641. Economic theory as it applies to specific business situations and decisions. Production levels, price determination, cost, competition, profits, supply/demand.

776 Marxian Economics (3:3:0). Prereq ECON 511 and 515. Major Marxian economic theories and criticisms of Marxian economics.


781 Austrian Theory of Market Process II (3:3:0). Prereq ECON 511, 515 (ECON 780 is rec). Continuation of ECON 780; topics vary and incl emphasis on market-process approach to analysis of capital accumulation, growth, money and credit institutions, inflation, unemployment, and industrial fluctuations.

795 Special Topics in Economics (3:3:0). Topics vary according to interests of instructor. Emphasis on new areas of the discipline. May be repeated for cr as new topics vary.

796 Directed Reading and Research (3:0:0). Independent reading and research paper on a topic agreed on by student and faculty member.

799 Thesis (3:6:0:0). Students who take ECON 796 and then elect the thesis option receive three cr for ECON 799 upon completion of the thesis. Students who do not take ECON 796 receive six cr for ECON 799 upon completion of the thesis.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in economics. Studies designed by student’s discipline director and approved by student’s doctoral committee, which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments are repeated according to each student’s program.

818 Seminar in Monetary Theory and Policy (3:3:0). Selected topics of current interest are discussed.


845 Seminar in Industrial Organization (3:3:0). Topics incl centrifugal and centripetal forces affecting aggregate and industry concentration; the impact of market structure on the rate of innovation; concentration, and oligopolistic price behavior; constraints on oligopolistic pricing; vertical integration; traditional antitrust policy, regulation, and state ownership.

850 Seminar in Public Finance (3:3:0). Prereq ECON 511 and 750. Important public finance issues treated in seminar format.

855 Seminar in Urban and Regional Economics (3:3:0). Prereq ECON 511. Development of regional economics of metropolitan areas and larger regions.

865 Seminar in Economic Development (3:3:0). Prereq ECON 511 and 515. Topics vary and incl macroeconomic and trade policies, inflation and labor migration.

870 Seminar in International Economics (3:3:0). Prereq ECON 770 and 771. Topics vary and incl subjects of current research and policy interests.

999 Doctoral Dissertation Research (var cr). Prereq Admission to Ph.D. economics program and permission of dissertation adviser. Research on an approved dissertation topic under the direction of dissertation committee. May be repeated. 24 cr hr may be applied to doctoral degree req.
Education

Faculty

Behrmann, Michael M., Ed.D., Columbia University, 1978; Assistant Professor

Beyer, Barry K., Ph.D., University of Rochester, 1962; Professor

Bindel, Henry J., Ed.D., University of Maryland, 1971; Professor

Bonfadini, John E., Ph.D., Virginia Polytechnic Institute & State University, 1976; Associate Professor

Bowen, Larry S., Ph.D., Ohio State University, 1970; Professor

Brown-Azarowicz, Marjory, Ph.D., University of Washington, 1961; Professor

Chu, Harold, Ph.D., University of Minnesota, 1973; Associate Professor

Collier, Virginia P., Ph.D., University of Southern California, 1980; Assistant Professor

Dobson, E. Clark, Ph.D., Florida State University, 1972; Associate Professor

Duck, Lloyd E., Ph.D., University of Virginia, 1974; Associate Professor

Dzama, Mary A., D.Ed., University of Virginia, 1972; Associate Professor

Edgemon, Albert W., Ed.D., Teachers College, Columbia University, 1964; Professor

Gilstrap, Robert L., Ed.D., George Peabody College, 1963; Professor

Given, Barbara K., Ph.D., Catholic University of America, 1974; Associate Professor

Haynie, William J., Ph.D., Pennsylvania State University, 1978; Assistant Professor

Isenberg, Joan P., Ed.D., Rutgers University, 1978; Associate Professor

Jacob, Evelyn J., Ph.D., University of Pennsylvania, 1977; Assistant Professor

Jacobs, Judith E., Ph.D., New York University, 1973; Associate Professor

Jones, Julie K., Ph.D., University of Pittsburgh, 1978; Assistant Professor

Levy, Jack, Ph.D., University of Southern California, 1973; Associate Professor

Martin, William R., Ph.D., University of Minnesota, 1968; Professor

Montebello, Mary S., Ph.D., Ohio State University, 1964; Professor

Remley, Theodore P., Ph.D., University of Florida, 1980; Assistant Professor

Schuchman, Betty J., Ed.D., Indiana University, 1967; Associate Professor

Sears, Carol J., Ph.D., The American University, 1976; Associate Professor

Seligman, Linda H., Ph.D., Teachers College, Columbia University, 1974; Associate Professor

Smith, Donald F., Ed.D., The American University, 1968; Associate Professor

Spikell, Mark A., Ed.D., Boston University, 1972; Professor

Thomas, Charles L., Ph.D., Johns Hopkins University, 1971; Associate Professor

Thomas, Wayne P., Ph.D., Virginia Polytechnic Institute & State University, 1980; Assistant Professor

Valero-Figueira, Eda, Ph.D., University of Michigan, 1978; Assistant Professor

Wilkin, William, Ph.D., Syracuse University, 1971; Associate Professor

Master of Education Programs, M.Ed.

The Department of Education offers the Master of Education degree, in the following fields: education administration and supervision, elementary education, counseling and development, reading, secondary education, school psychology, and special education.

Students holding the baccalaureate degree or a graduate degree who wish to take courses toward certification, endorsement, or licensure should apply...
for nondegree status in the Graduate School. For additional information contact the Department of Education.

Program Approval and Accreditation

All of the graduate programs listed above have been approved by the State Department of Education and are accredited by the Southern Association of Colleges and Schools and by the National Council for the Accreditation of Teacher Education.

Admission Requirements

The general admission requirements to the Graduate School for degree status are:

1. An earned baccalaureate degree from an accredited institution of higher education
2. A 2.75 grade-point average or better in the last two years of undergraduate study
3. Some undergraduate preparation for the chosen field of graduate study
4. Submission of official transcripts and all other documents required by the Graduate School.

In addition to fulfilling the Graduate School admission requirements, the applicant must:

1. Meet specific requirements for the program desired; the admission requirements for each program are shown in the following pages. Students admitted provisionally because of low grade-point averages normally will be required to demonstrate academic skills by taking courses in introductory and foundations courses in the program before being considered for admission as degree students.
2. If seeking graduate course work in teacher education, possess a temperament appropriate for the teacher as required by Virginia Certification Regulations.

Degree Requirements

In addition to fulfilling the Graduate School degree requirements, the candidate must:

1. Complete foundation requirements in the three areas listed below; each student, with adviser, should select courses that will broaden knowledge in those fields upon which professional activities are based; the following outline may serve as a guide:
   Area I, Foundations of Education, EDUC 521 (2)
   Area II, One two-semester hour course in specialized foundational studies. Select from EDUC 502, 503, 504, 509, 510, 523, 524, 529, 530.
   Area III, Research: EDUC 590
2. Complete the number of semester hours and course requirements for the graduate program in which enrolled
3. Pass a comprehensive examination (where required) covering the graduate program in which enrolled. The comprehensive examination given at the conclusion of each student’s program will be broadly conceived. Therefore, the student should support with independent reading those areas not chosen for course work.

Students having an interest in research may elect a program requiring the preparation of a thesis. Students electing a thesis in lieu of a comprehensive examination must include within the requirements for their program the following courses: EDUC 590, 591, and 599.

Program Requirements

It is each student’s responsibility to be aware of all requirements and to develop with the assigned adviser a program that will meet the requirements. The program should be developed as soon as possible after the student is admitted to degree status. The typical programs that appear for each degree are offered as examples.

The following programs require a practicum or internship: Counseling, Reading, Education Administration and Supervision, and Special Education. Students should apply for practicum or internship one semester prior to enrollment and observe the following application deadlines:
March 15 for Fall semester
September 15 for Spring semester
February 15 for Summer Session

Application forms are available in the Office of Field Experiences in the Education Department and must be returned to the student’s adviser.

Computer Names

Names provided for specialized courses in the six M.Ed. programs offered in the Department of Education are:
EDAS Education Administration/Supervision
EDCI Elementary/Secondary Curriculum and Instruction
EDGC Counseling

http://catalog.gmu.edu
EDRD Reading  
EDSE Special Education

Other education courses (including foundations, research and support courses) are prefixed EDUC. Prerequisites pertaining to each course are listed with the course descriptions in this catalog.

Elementary Education

The Master of Education Program in elementary education is designed to improve the competence of teachers working with children at the pre-elementary, lower elementary, and upper elementary levels.

Areas of Specialization

Each candidate may select one of the following areas of specialization:
Curriculum and Instruction (9 hours)
Pre-elementary (9 hours)  
Bilingual/Multicultural (12 hours)  
Instructional Applications of Microcomputers (15 hours)

Admission Requirements

Students preparing for the pre-elementary specialization (infancy–kindergarten) must:

1. Possess a baccalaureate degree
2. Submit evidence of three years of acceptable teaching or administrative experience in a preschool or elementary school program. (This requirement is waived for students who can provide evidence of certification in elementary education by the state of Virginia or another jurisdiction)
3. Submit recommendations by three persons qualified to judge the candidate’s professional competence.

Students preparing for the elementary curriculum and instruction and bilingual/multicultural specializations must:

1. Provide evidence of certification in elementary education by the state of Virginia or another acceptable jurisdiction
2. Submit recommendations by three persons qualified to judge the candidate’s professional competence.

Students interested in the Instructional Applications of Microcomputers specialization will find admission requirements in another part of the catalog.

Degree Requirements

In addition to the departmental degree requirements, students must take 6 hours of basic concentration courses, 9-15 hours in an area of specialization, and additional course work to meet the degree total of 30 semester hours. Normally, students are required to take as the basic concentration EDCI 650 and 782, in that order. (EDCI 782 is usually offered only in the Spring term.) In addition, students normally take hours in one of the following specializations:

1. Pre-elementary education (infancy–kindergarten): EDCI 511, 512, 513, 514, or EDSE 541 (641)
2. Curriculum and instruction: EDCI 657, 658, 660, 661, 663, 666, EDGC 624, EDRD 559, EDSE 541 (641), or EDUC 565
3. Bilingual/Multicultural (see special section of catalog)
4. Instructional Applications of Microcomputers (see special section of catalog).

Secondary Education

The Master of Education program in secondary education is designed to improve the competence of teachers who have completed a basic program in preparation for teaching and who hold a Virginia certificate or its equivalent. Teaching fields available for study are biology, business, chemistry, economics, English, French, German, government, history, mathematics, psychology, physical education, physics, science, social studies, Spanish, and vocational education.

Areas of Specialization

Each candidate may select one of the following areas of specialization:
Curriculum and Instruction (12 hours)
Bilingual/Multicultural (12 hours)
Instructional Applications of Microcomputers (15 hours)
Vocational Education (15 hours)

Admission Requirements

Applicants for Secondary Curriculum and Instruction, Bilingual/Multicultural, and Vocational Education specializations must:
1. Provide evidence of certification in secondary education by the state of Virginia or another jurisdiction.

2. Submit recommendations by three persons qualified to judge professional competence.

Students interested in Instructional Applications of Microcomputers specialization will find admission and degree requirements in another part of the catalog.

Degree Requirements

In addition to the departmental degree requirements, students must take 6 hours of basic concentration courses; 12-15 hours in an area of specialization, and additional course work to meet the degree total of 30 semester hours. Normally, students are required to take as the basic concentration EDCI 652 and EDCI 783, in that order. (EDCI 783 is usually offered only in the Fall term.) In addition, students normally take hours in one of the following specializations:

1. Curriculum and Instruction: nine hours of course work in the teaching field or a related discipline and one of the following as related to the teaching field: EDCI 567, 569, 572, 573, EDRD 614, 615, or EDUC 565.

2. Bilingual/Multicultural (see special section of the catalog)

3. Vocational Education (see special section of catalog)

4. Instructional Application of Microcomputers (see special section of catalog).

Secondary Education Certification Program

Students who wish to be certified in a Secondary School discipline must complete a graduate level, 30-hour certification program in Education. They must also complete those general education and discipline courses that they need to meet state certification requirements. These courses may either be undergraduate or graduate courses.

Students who wish to earn a Master's in Education degree in Secondary Education must complete 17 hours beyond the certification requirements for a total of 47 hours. This total includes 12 hours of practicum, which is the student teaching experience. The total number of hours any given student will complete is dependent upon the individual’s preparation in general education and in the liberal arts area of the discipline.

Certification Components

Admission Requirements: Students must meet the general admission requirements of the graduate school.
1. A baccalaureate degree from an approved institution
2. An undergraduate GPA of 2.75 on last two years of undergraduate study.

In addition, students must have an approved Plan of Study of course work needed for certification.

Admission to the Teacher Education Program for Students Seeking Secondary Education Certification

Admission to the Teacher Education Program is granted on a selective basis by the Teacher Education Screening Committee (TESC). Students seeking secondary education certification must meet all program entrance requirements prior to applying for admission to the program. Admission is a prerequisite for EDCI 515 (Practicum in Secondary Education). Application forms and detailed policies and procedures are available in the Office of Field Experiences.

Prerequisites for admission are the following:

Deadlines

Completed and signed application forms must be submitted to the Office of Field Experiences by January 1, March 15, August 1, or November 1 of the semester preceding that in which all prerequisites have been met.

Academic Requirements

1. Admission as a degree or nondegree student in the Graduate School
2. The student must be in good academic standing in accordance with the policies of the Graduate School
3. A minimum professional GPA of 2.75. To qualify for a Professional GPA the student must have: Completed EDUC 510, 522, and 524

Note: No grade below C will be accepted for
satisfactory completion of course work in the professional sequence. Grades of C or below may be remedied in accordance with Graduate School policy.

Proficiency Exams

1. Submission of scores for the General Knowledge and Communications Skills components of the National Teachers Exam (NTE) that meet the minimum standards for teacher certification in Virginia and are in effect at the time of the test administration
2. Successful demonstration of proficiency in written English and computer literacy
3. Completion of a panel interview as scheduled through the Office of Field Experiences.

Retention in Teacher Education Programs

Upon admission to teacher education programs, the student’s progress and development as a teacher will be monitored by the Coordinator of Field Experiences and the Education Department faculty. Should a student’s qualifications fall below the required level, admission status will be revoked until such time as the student presents appropriate evidence that these deficiencies have been remedied.

Requirements for retention are:

Academic Requirements

1. Continued academic performance at or above the admission requirement standards
2. Courses included in the computation of the professional GPA will include all courses taken through the Department of Education or accepted by the department for transfer credit.

Suitability for Teaching

Continued demonstration of suitability for teaching as stated in the admission requirements. Special focus will be placed on the student’s performance in methods courses and related field experience activities. When Education Department faculty notify the TESC of concerns relevant to the level of a student’s performance, a review of the case will be conducted and the student notified of those results in accordance with committee policy.

Admission to Student Teaching

In addition to having maintained all teacher education program requirements for admission and retention, students must make application for and be accepted for placement in student teaching.

Students must recognize the fact that the semester prior to student teaching is critical. Academic or performance deficiencies (i.e., incompletes, graduation deficiencies) may preclude student teaching.

Requirements for admission to student teaching are:

Deadlines

Filing of applications for student teaching in the Office of Field Experiences by February 10 for the Fall semester and September 10 for the Spring semester.

Academic Requirements

1. Completion of all degree or program requirements, except for student teaching, as determined by the student’s graduation catalog.
2. No grade below C in any professional sequence course.

Suitability for Teaching

Completion of an interview scheduled through the Office of Field Experiences resulting in a recommendation for admission to student teaching from the Coordinator of Field Experiences. In cases of denial, a review will be presented to the TESC for action in accordance with committee policy.

Education Courses:

1. EDUC 522 Introduction to Secondary Education (3)
2. EDUC 510 Human Development (Adolescence-Adulthood) (2) and EDUC 524 Learning Theory (2)
3. EDUC 531 Educational Tests and Measurements (3)
4. EDUC 593 Utilization of Instructional Technology (3)
5. Curriculum and Methods (Select one from the following):
   EDCI 567 Social Studies
   EDCI 569 English
   EDCI 572 Math
EDCI 573 Science  
EDCI 550 Foreign Language  
EDCI 519 English as a Second Language  
Prerequisites: Courses in Areas 1, 2, 3, and 4  
6. EDUC 529 Pluralism in U.S. Education (2)  
7. Practicum  
EDCI 515 Practicum in Secondary Education (12)  

Total Hours (30)

M.Ed. Component

Admission Requirements:
To be admitted to degree status in the Masters of Education in Secondary Education program, a student must have completed all but six credits in the liberal arts area of specialization as listed on the Plan of Study for certification.

Degree Requirements in Addition to the Education Courses in the Certification Component:
1. Courses:  
   EDUC 521 Foundations of Education (2)  
   EDUC 590 Educational Research (3)  
   EDCI 622 Curriculum Development in the Secondary School (3)  
   EDCI 783 Seminar in Secondary School Teaching (3)  
   Approved Electives* (6)  

Total Hours (17)
2. Comprehensive Exam or Master's Thesis.

Bilingual/Multicultural Education

Students in either the elementary or secondary M.Ed. program may specialize in bilingual/multicultural education. Twelve hours are required in the specialization:  
EDCI 517 Introduction to Bilingual Education (3)  
EDCI 518 Introduction to Multicultural Education (3)  
EDCI 519 Methods of Teaching in Bilingual/English–as–a–Second–Language Settings (3)  
One course in Linguistics (3), or  
EDRD 615 Teaching Reading in Multicultural/Multilingual Settings (3)  

This specialization is designed for all teachers who work with students of limited English proficiency. Fluency in a language other than English is not required. Financial aid is available for students proficient in Spanish, Korean, or Vietnamese, in addition to English.

Instructional Applications of Microcomputers

Students in either the elementary or secondary Master of Education programs may complete a specialization in the Instructional Applications of Microcomputers. This specialization is designed to enable students to incorporate microcomputers in the instructional programs of elementary and secondary schools.

Specialization Requirements

In addition to general degree requirements, students must take 6 hours of basic concentration courses (EDCI 705 and 782 or 783) and 15 hours of specialization courses: (One course selected from EDCI 519, 550, 567, 569, 572, 573, 658, 663, 666 or EDUC 565 and all of the following: EDCI 530, 532, 630, and 730.)

1. Admission criteria and procedures:
   Criteria. Applicants must meet the general requirements for admission to the M.Ed. programs in Elementary and Secondary Education. In addition, applicants must document: (1) Their ability to communicate effectively in writing, and (2) Their understanding of the application of this specialization to their work situation.
   Procedures. In addition to the regular application for admission to the M.Ed. program in Elementary and Secondary Education, applicants must complete an essay. The essay should address the following issues: (1) What do you want to do with the knowledge gained from the program? (2) How do you think you will use microcomputers in your classroom? (3) Experiences relative to the program.

   An interview may also be required.

2. Priority will be given to classroom teachers, or those who will have an impact on classrooms, at the elementary and secondary school levels.
3. All admissions shall be conditional. Candidacy will be granted upon completion of EDCI 530 or proficiency test in BASIC with grade of B or better.
4. Admission will be Fall semester only and application deadline will be February 1.
5. Students who apply to transfer from a GMU M.Ed. program to the IAM program must meet the same requirements as new applicants. Transfer will only

*Students must select, with adviser's approval, at least six graduate credits from one of the following areas: (a) The Instructional Applications of Microcomputers; (b) The Northern Virginia Writing Project; (c) Advanced Study in Discipline; (d) Bilingual/Multicultural Education.
be approved for Fall semester (same February 1 deadline).

**Northern Virginia Writing Project**

This Project, a cooperative effort between the Departments of English and Education, has developed several courses which students may use as part of the specialization requirement within the elementary or secondary M.Ed. program. These courses are:

- EDUC 695 NVWP In-Service Program
- EDUC 696 NVWP Research Seminar
- EDUC 697 NVWP Writing Theory Seminar

Teachers who have completed the Project's six-semester-hour summer institute may also use this as part of their degree requirements.

**Vocational Education**

Students in the M.Ed. in Secondary Education Program may specialize in vocational education. This specialization is designed to meet the needs of persons with a background in such areas as Industrial Arts, Education, Occupational Education, Business and Office Education, General Vocational Education, Special Needs Education, Cooperative Education, Adult Education, and Home Economics Education.

Nine semester hours in the vocational core are required to meet the state certification for administration and supervision of vocational education.

Master's Degree in Secondary Education with a specialization in Vocational Education requires 32 semester hours as follows:

**Educational Foundations:**
- EDUC 684 History and Philosophy of Vocational Education (3)
- EDUC 521 Foundations of Education (2)
- EDUC 590 Education Research (3)

**Vocational Core:**
- EDAS 631 Supervision of Instruction (3)
- EDUC 682 Curriculum in Vocational Education or EDUC 581 Cooperative Work/Study Curriculum (3)
- EDUC 631 Organization and Administration in Vocational Education or EDUC 587 Administering Cooperative Programs (3)

**Vocational Specialization:**
- EDUC 688 Internship (3 or 6)
- EDUC 783 Seminar (3)

**Electives (6 to 9)**

Interested persons should consult the Vocational Education Office in the Education Department.

**Reading**

The Master of Education program in Reading is designed to permit qualified candidates to become reading specialists or reading teachers at the elementary or secondary levels, Federal Grants: Chapter I - Reading teachers, adult education teachers and administrators of private reading programs. The program meets the standards established by the Virginia State Department of Education and the International Reading Association. Direct involvement with youths and adults is provided through assignments within individual courses. Practicum provides candidates the opportunity to put into practice the techniques and methods learned in individual courses. The Educational Child/Youth Study Center at the University is used as the practicum site. Program undergoing some modification; see program faculty for detailed information.

**Admission Requirements**

Applicants to the M.Ed. program in Reading must:

1. Provide evidence of certification at the collegiate professional level by the State of Virginia or another jurisdiction
2. Have completed two years of successful teaching experience
3. Be recommended by three professional educators in the position of principal, supervisor, or administrator, including at least one who has observed the applicant's teaching.

Exceptions to the first two admission requirements may be made with the approval of the department chair or associate chair for applicants seeking to work with adults.

**Degree Requirements**

The Master's Degree in Reading requires 36 semester hours as follows:

**Departmental Foundations Courses (7 semester hours)**
- EDUC 590 Education Research (3)
- EDUC 521 Foundations of Education (2)
- Other Foundations course (2)
Common Core Courses - 15 semester hours
EDRD 611 Remedial Reading (3)
EDRD 613 Diagnostic and Evaluative Techniques in Reading (3)
EDSE 652 Language Development and Disorders (3)
EDRD 790 Practicum in Reading (6)

Specialization requirements (select area of specialization) (3-6 semester hours)
For Reading Teacher (elementary certification)
EDRD 559 Teaching Developmental Reading in the Elementary School (3)
EDCI 657 Teaching Language Arts in the Elementary School (3)

For Reading Teacher (secondary certification)
EDRD 614 Teaching Reading in the Secondary School (3)
EDCI 569 Teaching English in the Secondary School (3)

For Reading Specialist (elementary certification)
EDRD 559 Teaching Developmental Reading in the Elementary School (3)
EDRD 618 Organization and Administration of Reading Programs (3)

For Reading Specialist (secondary certification)
EDRD 614 Teaching Reading in the Secondary School (3)
EDRD 618 Organization and Administration of Reading Programs (3)

Reading Specialist with ESL/multilingual students
EDRD 615 Teaching Reading in Multicultural/Multilingual Settings (3)

Reading Specialist with adults/college students
EDRD 616 Teaching Reading to Adults (3)
Electives - 6-11 semester hours

Selected in conjunction with advisers from list of specialization courses or other relevant courses.

Total: 36 semester hours

Applicants seeking to take selected courses for endorsement or professional development, not for degree, may apply as nondegree students. These applicants are required to provide evidence of successful completion of a baccalaureate degree and should generally have an undergraduate grade point average of at least 2.75.

Education Administration and Supervision

The Master of Education program in Education Administration and Supervision is designed to enable qualified individuals to improve their abilities to participate in the leadership and management behaviors required in schools and other institutions. Through individualization of programs, candidates prepare themselves for a wide variety of positions such as assistant principal, principal, instructional director, instructional coordinator, head teacher, director of education in business or government, and others.

Admission Requirements

All applicants must:
1. Have an undergraduate grade point average of at least 3.00
2. Provide three letters of recommendation.

Applicants to the M.Ed. program in Education Administration and Supervision who are planning on a school-based career* must:
1. Provide evidence of certification at the collegiate professional level by the State of Virginia or another jurisdiction
2. Have completed two years of successful teaching experience, a portion of which must be at the level where qualification is desired
3. Be recommended by three professional educators in the position of principal, supervisor, or administrator, including at least one who has observed the applicant’s teaching.

Degree Requirements

The Master of Education Degree in Administration and Supervision requires 30 -36 semester hours as follows:

Departmental Foundations Courses (7 semester hours)
EDUC 590 Education Research (3)
EDUC 521 Foundations of Education (2)
Other Foundations courses (2)

*(Persons from other fields must have comparable qualifications based on criteria appropriate to their respective fields.)
Program Requirements (15-18 semester hours)
Each student must take the following:
- Elementary, Middle, or Secondary School Curriculum (3)
- Education Administration (3)
- Supervision of Instruction (3)
- EDAS 789 Seminar in Education Leadership (3)
- EDAS 790 Practicum in Education Leadership (3-6)
- Electives (5-8 semester hours)

To meet the departmental comprehensive examination requirement, candidates for the M.Ed. degree in Education Administration and Supervision must present an acceptable written report based on a practice-oriented project completed during practicum enrollment.

Applicants seeking to take selected courses for endorsement or professional development, not a degree, may apply as nondegree students. These applicants are required to provide evidence of successful completion of a baccalaureate degree and should generally have an undergraduate grade point average of at least 2.75.

An advanced certificate program for post-master’s students in Education Administration and Supervision is presently under consideration. Contact program faculty for current information.

Counseling and Development

The Master of Education program in Counseling and development is designed to prepare students to function as counselors in a variety of work settings including elementary, middle, and secondary schools, colleges, and community agencies, and as other student personnel professionals in higher education. The program is designed to develop in its students competence in a broad range of counseling skills, including group and individual counseling, career counseling, and assessment. The program emphasizes the integration of theory and practice and seeks to prepare knowledgeable and capable helping professionals for a wide range of employment settings. The culmination of the students’ program is the internship in which they are placed in a school or agency counseling setting similar to that in which they hope to be employed. This offers students the opportunity to test and refine their counseling skills while experiencing the role of the counselor.

Admission Requirements

Students must satisfy admission requirements under either 1, 2, or 3 below:

1. Students preparing for elementary, middle, or secondary school counseling positions and seeking the M.Ed. degree must:
   a. Provide evidence of certification at the collegiate professional level by the state of Virginia or another acceptable jurisdiction;
   b. Have successfully completed a minimum of 12 semester hours of undergraduate work in the behavioral sciences. (Courses taken to make up undergraduate deficiencies cannot be used to fulfill degree requirements.)
   c. Have completed two years of successful work experience, one year of which must be in a school setting
   d. Submit three letters of recommendation from supervisors or professors regarding the potential of the applicant for the field of counseling
   e. Submit a statement of interests and objectives
   f. Be interviewed and recommended for acceptance.

2. Students preparing for counseling and student personnel work in colleges and for counseling in agencies and seeking the M.Ed. degree must:
   a. Possess a baccalaureate degree
   b. Have successfully completed a minimum of 12 semester hours of undergraduate work in the behavioral sciences
   c. Submit three letters of recommendation from supervisors or professors concerning applicant’s potential as a professional counselor or as a student professional
   d. Submit a statement of interests and objectives
   e. Be interviewed and recommended for acceptance.

3. Students who wish to take courses in the Counseling Program but do not want a degree should apply to the program as nondegree students. Such applicants will generally fit into one of the three following categories:
   a. Students seeking endorsement—these are applicants with a master’s degree in a helping profession who plan to take a series of courses, typically including an internship, leading to endorsement as an elementary, middle, or secondary school counselor in Virginia.
   b. Students seeking licensure—these are applicants with a master’s degree in a helping profession who plan to take a series of courses, typically including an internship, in order to obtain the 60 credits of
Degree Requirements

The M.Ed. degree in Counseling requires 39 semester hours. Students admitted to the degree program will take the following courses:*  
Department Foundations Courses—7 semester hours  
EDUC 521 Foundations of Education (2)  
EDUC 590 Education Research (3)  
Specialized Foundations Course (2)  
Core Courses—23 semester hours  
EDGC 604 Analysis of the Individual (3)  
EDGC 606 Counseling Theory and Practice (4)  
EDGC 608 Group Processes and Analyses (3)  
EDGC 610 Career and Educational Counseling (4)  
EDGC 754 Practicum in Counseling and Development (3)  
EDGC 790 Internship in Counseling and Development (6)  
Specialization courses (see below) (7-9)

Areas of Specialization

School Counseling

The school counseling specialization prepares students for careers as elementary, middle, or secondary school counselors. The admission requirements for this specialization were developed to ensure that graduates of this program of study will possess the academic and experiential prerequisites for endorsement as a school counselor by the Virginia Department of Education. Along with the Foundations and core courses common to all specializations, school counseling students also take two courses focusing on the school counselor's role, two other specialization courses, and a 180 hour internship in a school setting. Students who wish to be endorsed at more than one level of school counseling (e.g., elementary and middle) can do so by completing an additional two-credit course and a second internship that is 120 hours in length.

Required Specialization Courses:  
EDGC 620 Philosophy and Principles of School Counseling (1)  
EDGC 666 Counseling and Development for Special Populations (3)  
EDGC 668 Counseling and Development Programming (3)  
One of the following:  
EDGC 624 Theories and Practices of Elementary School Counseling (2)  
EDGC 626 Theories and Practices of Middle School Counseling (2)  
EDGC 628 Theories and Practices of Secondary School Counseling (2)

Higher Education Counseling

The higher education specialization is designed to prepare counselors and other student development professionals who share with teaching faculty the responsibility for humanizing and personalizing each student’s higher education. Graduates of the program are employed in a variety of positions in post-secondary education: counseling centers, career planning and placement, residence halls, student activities, financial aid, academic advising, and special programs for foreign students, returning students, minority students, and others. The higher education counseling specialization focuses on the role of student development professionals, knowledge of special groups, and higher education settings in which student development professionals use their skills.

Required Specialization Courses:  
EDGC 644 College Student Personnel Work (3)  
EDGC 666 Counseling and Development for Special Populations (3)

Community Agency Counseling

The specialization in community agency counseling is designed to prepare counselors for employment in a wide range of settings, including community mental health centers, family counseling centers, agencies specializing in career counseling, businesses and industries, rehabilitation agencies, and counseling programs in federal, state, and local governments. Students complete foundations and
core courses along with other students in the program. In addition, specialization courses familiarize students with the role and function of agency counselors and provide special skills they will need such as intake interviews, diagnosis and treatment planning, and couples and family counseling.

Required Specialization Courses:
EDGC 654 Counseling in Community, Agency, and Business Settings (3)
EDGC 656 Diagnosis and Treatment Planning for Mental Health Professionals (3)
EDGC 658 Couples and Family Counseling (3)

School Psychology
Certification in School Psychology can be obtained by completing the M.A. in Psychology. This program, jointly administered by the Departments of Education and Psychology, is open to students with either an Education or Psychology background. The degree is offered by the Department of Psychology, while the Department of Education assumes responsibility for certification. Further information concerning this program can be found under the Psychology Department in this catalog.

Special Education
The Master of Education degree in Special Education is designed to enable qualified individuals to become specialists in:

1. Learning Disabilities (LD)
2. Emotional Disturbance (ED)
3. Early Childhood Handicapped (ECH)
4. Severely and Profoundly Handicapped (SPH)
5. Bilingual/Multicultural Special Education (BMSE)

Completion of program course work in the areas of ECH, ED, LD, and SPH will allow the student to meet state endorsement requirements. Initial state certification can be obtained while seeking endorsement.

BMSE is taken in conjunction with any of the other four areas of specialization. Specific requirements include those of the chosen specialization (LD, ED, ECH, SPH) and one additional course (EDUC 532—Bilingualism and Language Acquisition Research).

Prior to state endorsement in SPH, LD, and ED, candidates must have or qualify for Collegiate Professional Certification or its equivalent.

Prior to state endorsement in preschool handicapped, graduates of the Early Childhood Handicapped program must possess Collegiate Professional certification and have completed two years of experience as an elementary or Special Education Teacher.

Admission Requirements
Applicants for the M.Ed. degree in Special Education must:

1. Provide evidence of successful completion of the baccalaureate degree
2. Submit recommendations by three persons qualified to judge the applicant's professional competence
3. Submit a written autobiography
4. Be interviewed and recommended for acceptance.
5. For LD and ED, applicants must complete or have completed one course in each of the following:
   a. Teaching of reading
   b. Teaching of mathematics
   c. Human growth and development
   d. Tests and measurement
   e. Survey of special education.
6. For ECH and SPH, applicants must:
   a. Provide evidence of successful completion of baccalaureate degree in a human services area such as education, psychology, sociology, or allied health services
   b. Provide evidence of work-related experiences with severely handicapped individuals
   c. Complete or have completed a course in tests and measurement.
7. For BMSE, applicants must:
   Also complete above requirements of the combined specialization (LD, ED, ECH, or SPH, and EDUC 532).

Degree Requirements
Early Childhood Handicapped (total credits required, 41–43)
EDSE 550 Precision Teaching: Individual Instructional Procedures (2 or 3)
EDSE 552 Language Development and Disorders (3)
EDSE 622 Augmentative Communication (2)
EDSE 647 Medical and Health Aspects of Handicapping Conditions (3)
EDSE 648 Introduction to Psychoeducational Assessment (2 or 3)
EDSE 649 Clinical Psychoeducational Assessment in Special Education (3)
EDSE 659 Curriculum and Methods—ECH (3)
EDSE 665 Family Intervention Programs for Handicapped Children (3)
EDSE 669 Transdisciplinary Approaches to Rehabilitation (2)
ECDI 514 Administering and Supervising Pre-Elementary Education (3)
EDSE 782 Comprehensive Topics in Special Education: Trends and Issues (2)
EDSE 790 Internship in Special Education (6)
EDUC 509 or EDUC 510 Human Development (2)
EDUC 590 Education Research (3)
EDUC 521 Foundations of Education (2)

Emotionally Disturbed (total credits required 42–45)
EDSE 544 Vocational and Continuing Education Aspects of the Academically Handicapped (1)
EDSE 550 Precision Teaching: Individual Instructional Procedures (2 or 3)
EDSE 552 Language Development and Disorders (3)
EDSE 553 Teaching Remedial Mathematics (2 or 3)
EDSE 554 Adaptive Methods in Education (2)
EDSE 620 Advanced Applied Behavior Analysis and Social Learning Theory (3)
EDSE 643 Emotional and Behavioral Disorders of Children (3)
EDSE 648 Introduction to Psychoeducational Assessment (2 or 3)
EDSE 649 Clinical Psychoeducational Assessment in Special Education (3)
EDSE 654 Curriculum and Methods - ED (3)
EDGC 606 Counseling Theory and Practice (3)
EDSE 782 Comprehensive Topics in Special Education: Trends and Issues (2)
EDSE 790 Internship in Special Education (6)
EDUC 529 Pluralism in U.S. Education (2)
EDUC 590 Education Research (3)
EDUC 521 Foundations of Education (2)

Learning Disabilities (total credits required 39–42)
EDSE 544 Vocational and Continuing Education Aspects of the Academically Handicapped (1)
EDSE 550 Precision Teaching: Individual Instructional Procedures (2 or 3)
EDSE 552 Language Development and Disorders (3)
EDSE 553 Teaching Remedial Mathematics (2 or 3)
EDSE 554 Adaptive Methods in Education (2)
EDSE 645 Characteristics of Children With Learning Disabilities (3)
EDSE 648 Introduction to Psychoeducational Assessment (2 or 3)
EDSE 649 Clinical Psychoeducational Assessment in Special Education (3)
EDSE 657 Curriculum and Methods - LD (3)
ECDI 606 Counseling Theory and Practice (3)
EDSE 782 Comprehensive Topics in Special Education: Trends and Issues (2)
EDSE 790 Internship in Special Education (6)
EDUC 529 Pluralism in U.S. Education (2)
EDUC 590 Education Research (3)
EDUC 521 Foundations of Education (2)

Severely and Profoundly Handicapped (total credits required 42–44)
EDSE 550 Precision Teaching: Individual Instructional Procedures (2 or 3)
EDSE 552 Language Development and Disorders (3)
EDSE 620 Advanced Applied Behavior Analysis and Social Learning Theory (3)
EDSE 622 Augmentative Communication (2)
EDSE 647 Medical and Health Aspects of Handicapping Conditions (3)
EDSE 648 Introduction to Psychoeducational Assessment (2 or 3)
EDSE 649 Clinical Psychoeducational Assessment in Special Education (3)
EDSE 661 Curriculum and Methods - SPH (3)
EDSE 668 Vocational and Leisure Education for Severely Handicapped (2)
EDSE 669 Transdisciplinary Approaches to Rehabilitation (2)
EDSE 782 Comprehensive Topics in Special Education: Trends and Issues (2)
EDSE 790 Internship in Special Education (6)
EDUC 509 or EDUC 510 Human Development (2)
EDUC 529 Pluralism in U.S. Education (2)
EDUC 590 Education Research (3)
EDUC 521 Foundations of Education (2)

Education, D.A.Ed.

The Doctor of Arts in Education (D.A.Ed.) program offers an advanced liberal-professional education for individuals pursuing or planning careers in non-traditional as well as traditional educational settings.

Program Requirements

The D.A.Ed. requires a minimum of 90 semester hours of study beyond the baccalaureate degree or a minimum of 60 semester hours beyond the master’s degree. A limited number of graduate hours may be transferred into the program. However, an individual’s total program may require more semester hours than these minimum requirements depending on the individual’s goals, assessed strengths and program requirements.
Program of Study

With the guidance of graduate faculty, students develop individual programs of study in concert with their goals, self-assessed skills and knowledge, and program requirements. Each student’s program must include interdisciplinary study in the liberal arts, sciences, and humanities; in a subject area supportive of his or her professional specialization; and in a professional education field.

Structure of Program

All enrollees in the program participate in a common core of required courses and seminars. These include:

- DAED 800, 801, 811;
- EDUC 805 (four two-credit seminars over three years of course work);
- EDUC 810, 911, 994, 998.

A sequence of at least five courses (15 semester hours) must also be taken in a specific area of special scholarship, which may be supportive of the student’s professional area of expertise (e.g., public affairs for an administrator, English for an English teacher, etc.). Students may choose to study in one of the following: anthropology, art, biology, chemistry, communications, economics, English literature, a foreign language, geography, geology, government, history, international relations, linguistics, mathematics, philosophy, physics, psychology, public administration and sociology. Preparation of a research paper demonstrating proficiency in the chosen subject and participation in seminar discussions of similar papers presented by one’s peers culminate this study this subject.

Additional internships, research seminars, or reading courses in special areas of education such as educational administration, educational uses of microcomputers, special education, curriculum and instruction, guidance and counseling, bilingual education, and so on are elected or required to complete the program. The specific nature of all courses is determined by the student in conjunction with his or her faculty doctoral advising committee during a required summer entry seminar, EDUC 800.

General Program Goals

To complete the D.A.Ed. program each individual must demonstrate competence in oral and written English; quantitative literacy (including use of computer technology); mastery of the knowledge and skills of an area of special scholarship and of an area of professional expertise; and the ability to apply general and specific knowledge and skills to significant educational problems. Students demonstrate these competencies by successful completion of courses and seminars, by passing a special written comprehensive qualifying examination near the conclusion of program course work, and by preparation and oral defense of a doctoral project.

Residency

The purposes of residency are achieved in the D.A.Ed. program through a combination of core courses and special seminars and through continuous enrollment. These requirements include successful completion of the Entry Seminar and of the required number of weekend doctoral seminars and participation in a specified number of special scholarship colloquia. Students must enroll in at least one approved course each semester they are in the program.

Internship

Candidates enroll in at least one and up to three internships designed to broaden their professional expertise. These internships may occur in a variety of settings. One three-credit internship must be taken in a setting that differs from the student’s work setting. In all cases, the student works with University and on-site supervisors.

Admission Requirements

Candidates are admitted to study by the Department of Education and by a department offering study in a field of special scholarship chosen by the student. Admission is a highly selective process. Up to 20 persons are admitted to the program each year.

In addition to completing all the University Graduate School admission requirements, each applicant must fulfill the following program admission requirements:

1. A minimum of three years of successful experience as a practitioner in an educational setting
2. A baccalaureate and/or master’s degree from an accredited institution
3. Demonstration of high intellectual capability
4. For applicants from public elementary and secondary education, evidence of certification at the
Virginia collegiate professional level (or its equivalent from another jurisdiction)

5. Minimum requirements established by the various areas of special scholarship

6. Demonstrated leadership potential.

Admission Documents

Each applicant must submit the following to be considered for admission:

1. A completed Graduate School Admission application

2. A completed Virginia Domicile Classification Form

3. All undergraduate and graduate transcripts

4. Three letters of recommendation

5. Graduate Record Examination or Miller Analogies Test scores

6. Evidence of certification at the Virginia collegiate professional level or its equivalent from another jurisdiction, if applicable

7. A written statement relating the study in the D.A.Ed. program to the applicant's educational and career plans.

The D.A.Ed. program accepts only one class of students annually. Those admitted into the program must enter the program through a program-planning seminar offered only during the Summer Session. Upon faculty approval of a student's program of studies, applicants are admitted to full doctoral student status.

Information and Applications

For further information about admission and program requirements, contact the Graduate School, the Admissions Office, or the Coordinator of the Doctor of Arts in Education program. Completed applications must be submitted to the Admissions Office of the University by February 1 of the year in which admission is sought.

Education Courses (EDUC)

500 In-Service Educational Development (1-6:0:0). Prereq Employment in professional capacity by sponsoring division or agency. Offered at request of school division or other educational agency. Content varies. May be repeated.

502 History of Education in the U.S. (2:2:0). Prereq Admission to grad school or Pol. A history of ideas about learning in the U.S. analyzed from the perspective of what can be accomplished for determining the future.

503 Philosophy of Education (2:2:0). Prereq Admission to grad school or Pol. A critical analysis and examination of ancient and contemporary educational philosophies and their impact upon educational thought and practice. The method of instruction is primarily lecture.

504 Issues in Comparative Education (2:2:0). An overview of national systems of education from the perspective of their similarities to and differences from education in the U.S., with special focus on the countries of recent immigrants to the Northern Virginia-D.C. metropolitan area.

506 Education and Cultural Transmission (3:3:0). Prereq Admission to grad school or Pol. Examination and application of studies in educational anthropology, with focus on the process of cultural transmission in the U.S. through formal and informal institutions. Analysis of U.S. values, cultural discontinuity, hidden transmission of values in schools, U.S. schools' response to cultural pluralism, cultural transmission in educational systems within other countries, school as an interface institution between cultures, biculturalism in schools.

508 Human Relations for Educators (3:3:0). Helps students develop an awareness of self and self-concept, learn communication skills for improving interpersonal relations, and create a non-discriminatory school environment.

509 Human Development: Infancy to Middle Childhood (2:2:0). Prereq Admission to grad school or Pol. An advanced course in the physical, psychological, cognitive and personality development of the child from birth to age 12. Emphasis is on the critical review of contemporary theories of human development and their relevance to educational practice.

510 Human Development: Adolescence Through Adulthood (2:2:0). Prereq Admission to grad school or Pol. An advanced course in the physical, psychosocial and cognitive development of the adolescent from pubescence to adulthood, as well as the study of adulthood from a developmental perspective. Emphasis is on the examination of the principal contemporary theories and conceptualizations of adolescence and adulthood and their application in contemporary educational settings. The relationship between development and learning will also be emphasized.

515 (formerly 684) History and Philosophy of Vocational Education (3:3:0). Prereq Completion of undergrad degree or appropriate educational req. Study of historical, philosophical and societal backgrounds of vocational education. Several specialty areas of vocational education and their relationship to general education. Students study current trends in their own areas of specialty with attention to the backgrounds of those trends.

operating within American educational institutions and other organizations. Current educational practices analyzed in terms of history, philosophy, psychology, socio-cultural factors of formal and informal learning. Emphasis on trends, issues, alternative futures.


523 The Exceptional Child in American Education (2:2:0). Prereq grad stg in the Department or Pol. This course will introduce the regular classroom teacher to the psychological, sociocultural, educational and physical aspects of the exceptional child. Emphasis will be given to the integration of the exceptional child in the regular classroom. Lectures, simulations, films and other modes of instruction will be utilized.

524 Learning Theory (2:2:0). Prereq Admission to Graduate School or Pol. Examination of the relationships among learning theory, motivation, personality development, social and emotional behavior and student attitudes. Emphasis on putting theory into practice.

529 Pluralism in U.S. Education (2:2:0). Prereq Admission to grad school or Pol. An examination of cultural pluralism in American education, with a focus on the nature of linguistic and cultural diversity in public schools, incl special education settings, the relationship between nonverbal communication and language systems, and interpersonal skills needed for encouraging harmony between the dominant culture and culturally and linguistically diverse communities in the United States.

530 Contemporary Social Issues in Education (2:2:0). Prereq Admission to grad school or Pol. An examination of selected social issues in education. Uses concepts and information from social sciences to understand the social issues and suggest possible remedies through practice and policy.

531 Educational and Psychological Measurement (3:3:0). Emphasis on techniques and principles used in the construction, administration and quantification of measuring devices for evaluation purposes; interpretation of standardized tests of ability, aptitude, achievement, interest, and personality.

532 Bilingualism and Language Acquisition Research (3:3:0). An examination of research in first and second language acquisition, including the interaction of a bilingual person's two languages, with implications for the classroom.

565 Production of Instructional Materials (3:3:0). Prereq Course in instructional media. Prepares teachers with basic knowledge needed to produce inexpensive teaching materials. Emphasizes planning, production techniques, and evaluation standards. Students are given an opportunity to work on individual projects in their own subject field.

571 Role and Function of the School Psychologist (3:3:0). Surveys roles and functions of the school psychologist within the educational environment. Considers certification and ethical standards of the school psychologist and current issues and trends.

579 School Psychologist Practicum (3:0:0). Prereq PolD. Field work with a practicing school psychologist in a school division two days per week.

581 Cooperative Work Study Programs (Curriculum and Methods) (3:3:0). Prereq Completion of proper undergrad req in Vocational Education for industrial cooperative instructors. Prepares teachers to develop curriculum materials for cooperative work study courses. Opportunity to gain proficiency in the techniques of planning and teaching generally related and directly related curriculum materials.

586 Competency-Based Instruction in Vocational Education (3:3:0). Intro to practical and theoretical components of the competency-based programs in vocational education. Incl methods and strategies of implementation for specific areas of vocational education; industrial arts, trade and industrial education, home economics, business and office education, health occupations, and cooperative programs.

587 Administration and Coordination of Cooperative Work Programs (ICTI) - (COE) (3:3:0). Prereq Completion of undergrad req in Vocational Education for industrial cooperative instructors. This course will prepare teachers in developing and selecting cooperative work stations. Teachers will gain proficiency in planning and working with advisory groups. Included in the course are materials related to employment opportunities, rules and regulations of employment, and design and completion of necessary documentation. State certification for Cooperative ICT Instructors requires completion of this course. The course is the second in the required sequence for certification.

589 Materials and Processes Technology (Variable) (3-12). An advanced lab course centering on the implementation of new technological methods of manufacturing and testing materials, energy utilization and products. Students will build, research and test individual products and ideas incl the strategies req for classroom implementation.

590 Education Research (3:3:0). Development of skills, insights and understandings basic to performing research, with emphasis on interpretation and application of research results. Critique of research and use of findings in educational settings.

591 Education Statistics (3:3:0). Intro to practical and applied aspects of statistics in education. Incl selected descriptive and inferential statistics; also statistical data processing.

593 (formally 625) Utilization of Instructional Technology (3:3:0). Effective utilization of educational technology in the teaching–learning situation.

598 Directed Reading, Research and Individual Projects (1-6:0:0). Prereq Admission to a degree program and PolD. Various subjects and projects, principally by directed study, discussion, research, and participation under the supervision of a member of the grad faculty. May be repeated. No more than six hr of EDUC 500, (may also be listed as EDAS, EDGC, EDRD or EDSE) 598 and/or 600 may be applied to degree cr.

599 Thesis (6:0:0). Prereq EDUC 590 and 591 Study of a problem of significant interest to the student, utilizing
accepted research methods under the supervision of a member of the grad faculty.

600 Workshop in Education (1-6:0:0). Full-time workshops, weekend seminars, and workshops dealing with selected topics in education, education tour seminars. May be repeated.

610 Practical Research in School Psychology (4:0:0). Prereq Completion of req courses in school psychology program and/or Po program coordinator. School psychology students who do not choose a master's thesis may complete a practical project in the school system under the supervision of a faculty member. Students complete a paper on their project and have it approved by their adviser and at least one other faculty member.

665 School Psychology Internship (3:0:0). Prereq Completion of req courses in school psychology and/or Po program coordinator. A one-school-year supervised field experience where the advanced school psychology student functions as a full-time staff member within a school system.

680 Competency-Based Instruction in Vocational Education - Technical Area Specialty (3:3:0). Advanced course. Provides opportunity to research and implement competencies associated with a specific instructional area. Each student researches and identifies present occupationally related skills in the cognitive, psychomotor, and affective domains and incorporates these into a specific instructional program.

681 Organization and Administration of Vocational Education (3:3:0). Study of principles and practices of organizing and administering vocational educational programs in the public schools. Areas of concern are: planning, policies, personnel professional development, program development, budgeting, public relations, teacher evaluation, program evaluation, and research.

682 Curriculum Development in Vocational Education (3:3:0). Curriculum development for teachers of vocational subjects. Program development, implementation, and evaluation are studied with emphasis on current trends in vocational education. The impact of the Virginia Vocational State Plan and competency-based instruction are stressed.

686 Teaching and Working with Adult Learners (3:3:0). Prereq Completion of undergrad degree or appropriate educational req. Designed to provide adult instructors with the necessary fundamental program skills req to organize and administer programs for teaching adults. Topics relate to vocational and avocational adult basic program goals incl an overview of existing vocational and adult programs in the community.

687 Industrial Safety (3:3:0). Prereq Completion of undergrad degree or appropriate educational req. Designed to acquaint teachers, industrial managers, and others with the legal responsibilities related to various industrial and educational environments. Includes field visits.

688 Internship in Vocational Education (1-6:0:0). Prereq Completion of undergrad degree or appropriate educational req. Opportunity to complete a total of six hr placed in education, industry or business associated with the area of teaching responsibility. Students research the various technical and professional skills req for successful employment and develop recommendations for curriculum revisions. Projected program changes are presented to peer groups at regularly scheduled seminars.

695/ENGL 695 Northern Virginia Writing Project In-Service Program (1-3:0:0). Prereq Admission to the grad program or PoD. Offered at the request of a school division or other educational agency. Concentrates on principles and techniques of studying writing in a school setting. Focus on development of a proposal investigating some aspect of the composing process. Teachers who have developed a proposal prior to enrolling will conduct the research during the course.

696/ENGL 696 Northern Virginia Writing Project/Research Seminar (3:3:0). Prereq EDUC 695/ENGL 695 or NVWP Summer Institute. Designed to acquaint classroom teachers with current findings related to the composing process and methods of studying writing in a school setting. Focus on development of a proposal investigating some aspect of the composing process. Teachers who have developed a proposal prior to enrolling will conduct the research during the course.

697/ENGL 697 Northern Virginia Writing Project/Theory of Composition (3). Prereq ENGL/EDUC 695 OR NVWP Summer Institute. Designed to acquaint classroom teachers with current theory relating to writing and the teaching of composition. Focus is on making explicit the theories of the participants, on reading the works of leading theorists, and on developing a statement describing the implications of theoretical consistency in the teaching of writing.

699 Computer Applications in Education (3:1:2). Prereq None. This course introduces grad students to the instructional and data based management uses of microcomputers and mainframe computers in school settings. Emphasis is placed on study, analysis, and exploratory application in laboratory classes of selected concepts of computer usage to achieve objectives common to a variety of formal education settings.

752 Seminar in Instructional Application of Computers (3:3:0). Prereq EDUC 699 or Pol. Mastery of BASIC. Concentrates on principles and techniques of implementation of instructional curricula using computers, especially microcomputers. Emphasizes computer-assisted, computer-managed, and computer-based instruction, advanced BASIC statements, the use of instructional programming and authoring languages (e.g., LOGO, PILOT), courseware authoring systems, and the evaluation and validation of educational software for instructional purposes.

754 Seminar in Computers for Educational Administration and Research (3:2:1). Prereq EDUC 699 or its equiv or Pol. Mastery of BASIC. Emphasizes the principles and techniques of using microcomputers, minicomputers and large mainframe computers for purposes of record keeping, management information, instructional supervision and data analytic research in instructional settings in education and industry.

800 Doctoral Entry Seminar (3:3:0). Prereq Provisional admission to the D.A.Ed. prog. Course req for all entering...
candidates. A seminar in which students examine the components of the D.A.Ed. programs and engage in intensive self-assessment of skills and knowledge, and plan their doctoral programs. Full-time participation req for first two weeks; variable scheduling for remaining three weeks. Offered summer only.

805 Doctoral Seminar in Education (2:2:0). Prereq Admission to the D.A.Ed. program or Pol. An advanced course in the interpretation and application of education research methods. Emphasizes comparing alternative philosophies of research, ways of formulating questions/hypotheses, research plans and analysis procedures. Students evaluate existing studies and investigate a range of research approaches.

810 Problems and Methods in Education Research (2:2:0). Prereq Admission to the D.A.Ed. program or Pol. Advanced course in the course of research methods. Emphasizes comparing alternative methodologies of research, ways of formulating research questions and hypotheses, research plans and analysis procedures. Students evaluate existing studies and investigate a range of research approaches.

811 Quantitative Methods in Educational Research (2). Prereq Satisfactory completion of EDUC 810 or its equiv or Pol. Students study and apply quantitative data collection and analysis appropriate for research in education. Includes the design of experimental and quasi-experimental research studies and methods of analysis appropriate to these studies, incl the analysis of variance and multiple linear regression.

812 Qualitative Methods in Educational Research (2:2:0). Prereq Satisfactory completion of EDUC 810 or its equiv Pol. Students study and apply qualitative data collection and analysis procedures used in educational research, incl ethnographic and other field-based methods, historical materials and unobtrusive measures. Emphases vary depending on the interests and needs of the students.

820 Evaluation Methods for Educational Programs and Curricula (3:3:0). Prereq Satisfactory completion of EDUC 810 or its equiv or Pol. Explores the development and types of current systems and models for evaluating educational programs and curricula. Emphasis is on procedures for evaluation of public and private elementary and secondary schools, colleges and universities and government and industrial education programs.

840 Seminar in Adult Development and Learning (3:3:0). Prereq Admission to the Doctor of Arts in Education program or Pol. An advanced course in the nature of the adult learner and the processes of adult learning and development. Emphasizes adults as learners, motivations of adult learners and their participation patterns in adult education activities, and learning theory implications for adult learners.

881 Seminar in Bilingual Education: Policy (3:3:0). Prereq Admission to the D.A.Ed. program. Examines the historical development of bilingual education in the U.S., focusing on federal and state legislation and court decisions of the last two decades. Policy issues and programmatic models developed in response to legal mandates and legislative decisions affecting bilingual education are explored in depth from federal, state and local points of view.

882 Seminar in Bilingual Education: Theory and Research (3). Prereq Admission to the D.A.Ed. program. Examines the theoretical foundations of bilingual education through focus on linguistic, anthropological, sociological, psychological and educational research in the areas of first and second language acquisition, language use in a bilingual classroom, code-switching, bilingualism and intelligence, cognitive style, the teaching of reading, language dominance proficiency assessment, achievement testing, special needs assessment and research on the effectiveness of bilingual education.

890 Doctoral Internship in Education (3:3:0) or (1:1:0 to 6:6:0). Prereq Admission to the D.A.Ed. program. Requires 100 hr of on-site internship completed over at least a five-week period. Interns work with an appropriate staff member in a cooperating school, school system, or other educational institution, agency, or setting. Up to 6 hr of EDUC 890 may be applied toward D.A.Ed. degree req.

895 Seminar in Emerging Issues of Education (3:3:0). Prereq Satisfactory completion of EDUC 800 and DAED 800. Focuses on the study of selected emerging issues or problems in education. Students engage in research, study, discussion and writing about various aspects of the topics selected for study. May be repeated. Up to 6 hr of EDUC 895 may be applied toward D.A.Ed. req.

896 Doctoral Seminar in “Curriculum Areas” (2:2:0). Prereq Successful completion of EDUC 800 and DAED 800. Focuses on research, theory and exemplar practice in specific subject areas of education. Students engage in research, study, discussion and writing in the designated subject area to analyze trends, assumptions, and important implications for the educational area today and in the future. Usually taken near the end of D.A.Ed. course work.

897 Independent Study for the Doctor of Arts in Education (varying cr). Prereq Admission to the D.A.Ed. program and doctoral student status; Po student’s doctoral advising committee. A structured learning experience designed to extend and develop skills and knowledge relative to a field of professional expertise.

911 Doctoral Projects Seminar (2:2:0). Prereq Admission to candidacy in the D.A.Ed. program, successful completion of the doctoral qualifying examination and EDUC 590 or its equiv. Development of proposals for individual projects in the D.A.Ed. prog. May be repeated once. No more than eight hr of EDUC 911 and EDUC 998 may be applied toward the minimum D.A.Ed. degree req.

994 Advanced Internship in Education (3:3:0). Prereq Admission to candidacy in the D.A.Ed. program; and Po student’s doctoral committee. Req internship in a setting related but not identical to the student’s major area of study. Req a minimum of one-hundred hr completed over at least a five-week period. Each intern works with an appropriate staff member in a cooperating school, school system, other educational institution or agency, or in a setting that may differ from regular employment.

998 Doctoral Project Research (6:0:6). Prereq Admission to candidacy in the D.A.Ed. program, successful completion of the doctoral qualifying examination, and EDUC 590 or its
Doctor of Arts in Education Courses (DAED)

Interdisciplinary Courses (DAED)

For other D.A.Ed. courses see also EDUC 800, 805, 890, 897, 911, 994, 998, and 999.

800 Ways of Knowing (3:3:0). Prereq Satisfactory completion of EDUC 800. Provides an understanding of the methods of inquiry in various fields of study. Examines selected disciplines in terms of subject matter, scope, key concepts, principles, generalizations, and theories in each field. The characteristic way of knowing in each discipline is studied as a tool for the analysis and solution of educational issues and problems.

801 Seminar in Liberal Education (3:3:0). Prereq Satisfactory completion of DAED 800. Analysis of American education from a variety of discipline perspectives. Students apply concepts and methodologies studied to a study of liberal education in America. Includes regular seminar papers and critiques.

811 Doctoral Colloquium in Special Scholarship (1:1:0). Prereq Draft of discipline research paper and approval of the D.A.Ed. Discipline Coordinator. A colloquium in which D.A.Ed. students present and critique discipline research papers. Required for the D.A.Ed. program.

897 Independent Study for the Doctor of Arts in Education (varies cr). Prereq Admission to the D.A.Ed. program. An independent study in which the student engages in an interdisciplinary study which is supportive of the student's program goals but which is not directly in the field of Education or in the student's special discipline. The course may be repeated up to a maximum of six hr.

Administration/Supervision (EDAS)

500 See EDUC 500.

600 See EDUC 600.

611 School-Community Relations (3:3:0). Principles, philosophy, practices and agencies involved in developing and maintaining desirable relationships between schools and communities.

612 School Law (3:3:0). Provides the background in school law needed by school administrators, supervisors, counselors and others.

621 School Administration (3:3:0). Prereq Teaching experience. Basic principles and practices of school organization and administration. Emphasis on elementary, middle and high schools with reference to state and district structures.

631 Supervision of Instruction (3:0:0). Prereq Teaching experience and EDCI 650, 651 or 652. Basic principles and practices of instructional supervision. Elementary, middle and high school specialization may be accomplished through options in reading and project assignments.

725 (formerly EDAS 625) Educational Finance (3:3:0). Study of the economic interdependence of educational systems and society and economic concepts as they relate to schooling. Focus on issues, solution sets and philosophies of educational funding. This course may not be taken by anyone who has previously taken and satisfactorily completed EDAS 625.


789 Seminar in Education Leadership (3:3:0). Prereq EDCI 650, 651 or 652; EDAS 631 and 621; admission to the degree prog in education administration and supervision; or PoD. Advanced study in school leadership for the evaluation and facilitation of instruction. Emphasis on individual and group processes in supervision. Field experiences req.

790 Practicum in Education Leadership (3- or 6:0:0). Prereq PoD; admission to and completion of the grad prog except for practicum, or enrollment in the final term of the prog. Students translate administrative and supervisory theory into practice through field experiences and intensive seminar inquiry. Placement in elementary school, middle school, high school or central office situations.

Elementary/Secondary Education Courses (EDCI)

500 See EDUC 500.

507 Internship in Applied Linguistics (3:0:3). Prereq grad stdg in the Education or English Department and EDCI 519 or ENGL 521 (ESL methods course). Internship requires 100 hours completed over at least a five-week period for three hours of credit. Internship provides practical experience in the field of English as a Second Language and Applied Linguistics as, e.g., teacher, administrator, counselor, or researcher. For placement, consult instructor before semester starts.

511 Preparing the Pre-Elementary Environment (3:3:0). Study of procedures, materials and organization of environments for young children (infancy-kindergarten). Field experiences req for students without previous teaching or administrative experience at the pre-elementary levels.

http://catalog.gmu.edu
512 Home-School Relations in Pre-Elementary Education (3:3:0). Examination of patterns and problems of family life for the purpose of improving communication between teachers and parents.

513 Play as a Growth Process in Pre-Elementary Education (3:3:0). Focus on play as an approach to teaching and learning; examined as an intellectual, social and emotional function in children’s development.

514 Administering and Supervising Pre-Elementary Education (3:3:0). Examines programs and techniques relating to the administration and supervision of pre-elementary education programs. Emphasis on the director’s role in staff recruitment, hiring, development and evaluation. Leadership and management techniques.

515 Practicum in Secondary Education (12:0:12). Prereq Admission to and completion of all additional course work in the secondary education certification program, admission to and good stdg in the Teacher Education Program and/or permission of instructor and adviser. An intensive, supervised clinical experience of a full semester in an approved school in Virginia. Experience at the secondary level. Participation in scheduled group sessions req.

517 Introduction to Bilingual Education (3:3:0). Analysis of concepts, principles, and issues of bilingual education; its present status, and its future direction. Focus on current programs and their relationship with curricula in English as a second language.

518 Introduction to Multicultural Education (3:3:0). A survey of multicultural education that examines problems faced by an individual in an alien culture, theories of bilingual/multicultural education, relationships between nonverbal communication and language systems, and interpersonal skills needed for encouraging harmony between our dominant culture and minority ethnic communities.

519 Methods of Teaching in Bilingual/English-as-a-Second Language Settings (3:3:0). Examination of past and current methods and techniques for teaching English as a Second Language (ESL) in bilingual/ESL classrooms. Students analyze all program models and methods of instruction for students of limited English proficiency; practice teaching strategies based on recent second language acquisition research; and examine materials, textbooks, and resources available in the field. This course includes a field experience component and meets Virginia certification requirements for ESL teachers.

520 Assessment and Curriculum Development in Bilingual/English-as-a-Second-Language Settings (3:3:0). Examination of issues in testing students of limited English proficiency and development of curricular materials for bilingual English-as-a-Second-Language classrooms. Analysis of testing for placement, diagnosis, entry–exit criteria and evaluation; and examination of sources and models of curriculum development for bilingual/ESL classrooms.

530 Programming Microcomputers in BASIC for Instructional Applications (3:3:0). Prereq None. Students will learn the fundamentals of operating a microcomputer. The major focus of the course will be learning to use the BASIC language to program microcomputers for instructional applications.

532 Programming Microcomputers in LOGO for Instructional Applications (3:3:0). Prereq EDCI 530 or Pol. Students will learn how to write and use programs in LOGO, an interactive programming language used in schools. They will create microcomputer activities which develop problem solving skills and programming skills.

550 (formerly EDUC 450) Teaching Foreign Languages in the Secondary School (3:3:0). Study of theories and methods of foreign language teaching, with practical application to the classroom. Field experience req for those seeking initial teacher certification. Fall semester only.


600 See EDUC 600.

630 Supervising and Organizing Instructional Uses of Microcomputers (3:3:0). Prereq EDCI 530 or Pol. Teachers will do some programming; develop criteria for selecting microcomputer hardware; learn to choose and evaluate available software; and study, analyze and develop procedures for organizing and managing the use of microcomputers in schools.

650 Curriculum Development in the Elementary School (3:3:0). Study of development of the curriculum in the pre-elementary, elementary levels; historical backgrounds; present programs; development of new programs; methods of implementing new programs; and evaluative methods and procedures.

651 Curriculum and Instruction in the Middle School (3:3:0). Study of development of curriculum in the middle school grades; historical backgrounds, present programs; development and implementation of new programs; program evaluation; instructional and organizational implications.

652 Curriculum Development in the Secondary School (3:3:0). Study of development of the curriculum in the secondary school; historical backgrounds, present programs; development of new programs; methods of implementing new programs; and evaluative methods and procedures.
657 Teaching Language Arts in the Elementary School (3:3:0). Study of methods, curricula, current issues and research literature in English-language arts programs of the elementary school. Emphasis on recent innovations in methodology and traditional concerns of the communication arts.

658 Teaching Social Studies in the Elementary School (3:3:0). Prereq Course in teaching social studies in the elementary school. Study of methods, materials, content and organization of social studies programs in the elementary school.

660 The Diagnostic Teaching of Reading in the Elementary School (3:3:0). Prereq Course in reading. Use of diagnostic techniques, diagnostic instruments and evaluation to individualize the reading instruction in the classroom. Primarily designed for classroom teachers.


663 Teaching Science in the Elementary School (3:3:0). Prereq Course in teaching science in the elementary school and/or Pol. An advanced course methodology and materials involved in the teaching of the biological, physical and earth sciences.


701 Educational Program Development (3:3:0). Prereq Completion of student teaching or a bachelor's degree from an accredited undergraduate institution. Analysis and application of principles and procedures essential to the planning, design, testing, evaluation, revision and implementation of instructional programs for use in schools, community colleges, public agencies, museums and business settings. Studies selected theory, research and exemplary practice regarding program development, and investigates alternative strategies for developing instructional programs.

705 Instructional Design (3:3:0). Prereq Bachelor's degree from an accredited institution; teaching experience. Analysis, application and evaluation of the principles of instructional design to develop and evaluate narrative texts, programmed drill and practice materials, tutorial modules and simulations. Attention is given to materials designed to develop problem solving skills.

730 Designing Learning Activities for Microcomputers (3:3:0). Prereq EDCI 530 and EDCI 701. Students will design, write, implement and evaluate microcomputer learning activities and ancillary materials for microcomputers.

782 Seminar in Pre-Elementary and Elementary School Teaching (3:3:0). Prereq Student must have completed grad program except for seminar, or be in final semester of program, or PoD. Application of grad course work to instructional situations through discussion, projects and reports related to practice and/or research.

783 Seminar in Secondary School Teaching (3:3:0). Prereq Student must have completed grad program except for seminar, or be in final semester of program, or PoD. Application of grad course work to instructional situations through discussion, projects and reports related to practice and/or research.

Counseling and Development Courses (EDGC)

500 See EDUC 500.

600 See EDUC 600.

604 Analysis of the Individual (3:3:0). Development of a framework for understanding the individual in counseling, incl methods of gathering and interpreting data; choosing, administering, and interpreting individual and group tests; the study of individual differences; use of case study technique.

606 Counseling Theory and Practice (4:3:1). Prereq Course in human development or learning theory. Study of theories, principles and techniques of counseling and applications to counseling settings. Attention to supervised practice sessions. Includes lab.

608 Group Processes and Analyses (3:3:0). Prereq EDGC 606. Incl theories appropriate to various types of groups, and descriptions of group practices, methods, dynamics and facilitative skills. Attention to application of theory to practice.

610 Career and Educational Counseling (4:3:1). Prereq EDGC 604 and 606. Study of vocational choice theory, sources of occupational and educational information, approaches to career decision-making processes, and career development exploration techniques. Attention to application of theory to practice. Includes lab.

620 Philosophy and Principles of School Counseling (1:1:0). An introduction to school counseling programs at the elementary, middle and secondary levels. Philosophy and basic principles necessary for effective school counseling programs.

624 Theories and Practices of Elementary School Counseling (2:2:0). School counseling programs at the elementary school level will be explored. Emphasis will be on appropriate counseling practices in the elementary school setting. Developmental needs of students five to ten years of age will be considered.

626 Theories and Practices of Middle School Counseling (2:2:0). School counseling programs at the middle school level will be explored. Emphasis will be on appropriate counseling practices in the middle school setting. Developmental needs of students ten to fourteen years of age will be considered.

628 (formerly EDGC 634) Theories and Practices of Secondary School Counseling (2:2:0). School counseling programs at the secondary school level will be explored. Emphasis will be on appropriate counseling practices in the secondary school setting. Developmental needs of students 14 to 18 years of age will be considered.

644 College Student Personnel Work (3:3:0). Introduces theory, nature and background of student personnel work in higher education. Structure, organization and administration of services and programs.
654 Counseling in the Community, Agency, and Business Settings (3:3:0). Emphasis on the types of services and facilities provided, needs, and problems of the client population served, role and function of the counselor in the agency setting, and personnel needs of the individual agency.

656 Diagnosis and Treatment Planning for Mental Health Professionals (3:3:0). Prereq EDUC 506. By using actual and hypothetical cases, the course helps the student develop written plans and simulate implementation for overall diagnosis and treatment of agency clients and their families.

658 Couples and Family Counseling (3:3:0). Prereq EDUC 606. Introduces major approaches to counseling couples and families. Case studies and simulations facilitate the transition from theory into practice.

666 Counseling and Development for Special Populations (3:3:0). Study of the nature, characteristics, and needs of special groups seeking counseling and development services. Analysis of content, techniques, and goals of programs developed to serve these groups.

754 Practicum in Counseling and Development (3:3:0). Prereq EDUC 606 Focus on basic counseling skills through simulated and actual counseling experiences. Students are req to volunteer in a counseling setting and spend time in class meeting for presentation, analysis, and practice of techniques.

790 Internship in Counseling and Development (6:0:0). A. Elementary; B. Middle; C. Secondary; D. Higher Education; E. Agency. Prereq Admission to and completion of the grad program except for internship, and PoA based on satisfactory academic stdg and satisfactory level of counseling skill. Supervised practice of counseling in a setting similar to that in which students plan to work. (Elementary, middle, and secondary school internships open to certified personnel only. All other students are placed in a setting related to their career goals.)

Reading Education Courses (EDRD)

500 See EDUC 500.

559 Teaching Developmental Reading in the Elementary School (3:3:0). Advanced course. Study of foundations of reading; principles, techniques and materials for developmental reading programs.

600 See EDUC 600.

611 Remedial Reading (3:3:0). Prereq EDRD 559 or 614. Incl nature and causes of reading difficulties, organization of remedial reading programs, use of remedial techniques, teacher aids and learning centers, psychological and health services, and innovative methods and materials.

613 Diagnostic and Evaluative Techniques in Reading (3:3:0). Prereq Admission to grad program in reading, EDRD 611 or 612, and PoA. Technical diagnosing of reading problems. Procedures in testing, scoring, and evaluating standardized and informal tests, individual and group tests, physical and psychological tests, and techniques of reporting test results.

614 Teaching Reading in the Secondary School (3:3:0). Emphasis on reading in content areas; reading problems; causes, diagnosis, remediation; skills and speed reading.

615 Teaching Reading in Multicultural/Multilingual Settings (3:3:0). Develops competencies in reading methods for students from multicultural or multilingual backgrounds. Emphasis on increasing the teacher's knowledge and understanding related to effective reading instruction. Particular emphasis on issues, methods, techniques, innovative designs for teaching, problem areas, linguistic differences, pre-reading skills, and the psychological development of the child.

616 Teaching Reading to Adults (3:3:0). Incl history of adult education, assessment techniques and reading methods and materials that meet the special needs of adult students.

617 Teaching Reading to the Gifted (3:3:0). Prereq EDRD 559 or 614. Study of higher levels of reading attainment: speed reading, critical reading, advanced study skills, intellectual needs of the gifted and literature and materials for enrichment programs.

618 Organization and Administration of Reading Programs (3:3:0). Prereq EDRD 559 or 614, EDRD 611, EDRD 613 or PoL. Designed to examine the roles of administrative staff and resource personnel in reading programs. Emphasis will be placed on the roles of reading administrators (consultants, specialists or language arts supervisors), the organization and implementation of reading programs and services, a review and analysis of management techniques, and the development of skills necessary to implement reading programs.

790 Practicum in Reading (3-6:0:0). Prereq Admission to and completion of the grad program in reading except for practicum; or enrollment in the final semester of the program; and PoA. Supervised practice in the Educational Child/Youth Study Center, work with individuals and small groups using a variety of reading procedures. Participation in scheduled group sessions req.

794 Internship in Reading (3:3:0). Prereq Admission to and completion of grad program in reading except for practicum; or enrollment in the final semester of the program; and PoA. Supervised teaching and participation as a reading specialist in a public school system. Participation in scheduled group sessions req.

Special Education Courses (EDSE)

500 See EDUC 500.

541 Survey of Special Education (3:3:0). Emphasis on historical developments of definitions, characteristics, identification, incidence and legislation related to special education. Field observations and volunteer experiences req.

543 Sociocultural Aspects of Disabilities (2:2:0). Primarily a lecture course designed to explore the sociological, anthropological and linguistic aspects of handicapping conditions in multicultural and bilingual environments.

544 Vocational and Continuing Educational Aspects of the Academically Handicapped (1:1:0). Prereq None. Primarily a
lecture course designed to explore factors for developing vocational independence in individuals with disabilities and/or limited English proficiency.

550 (formerly 650) Precision Teaching: Individual Instructional Procedures (2:2:0) or (3:3:0). Focus on identifying, recording, changing and evaluating social and academic behaviors. Development of individual education programs emphasized. Field experiences required.

552 (formerly 652) Language Development and Disorders (3:3:0). Examines influence of conflicting theories concerning language acquisition; analysis of verbal and non-verbal communication; techniques of language assessment; and strategies for language intervention.

553 (formerly 653) Teaching Remedial Mathematics (2:2:0) or (3:3:0). Study of techniques for assessing and remediating difficulties in mathematics.

554 Adaptive Methods in Education (2:2:0). Prereq EDSE 541. Students apply theory to practice as they adapt different levels of general education course content to accommodate various learning styles. Emphasis is placed on adaptation of materials, intervention methods and the development of an on-going system for evaluation of student progress. Teacher/parent/student communication is highlighted.

600 See EDUC 600.


622 Augmentative Communication (2:2:0). Prereq grad stdg, EDSE 552 (can be coreq) and PoA. Focus on alternative language and communication techniques for children with severe language and speech impairments.

643 Emotional and Behavioral Disorders of Children (3:3:0). Prereq EDSE 541 or PoA. In-depth study of characteristics of individuals experiencing emotional and/or psychological disturbance. Implications for educational intervention. Field experiences req.

645 Characteristics of Children with Learning Disabilities (3:3:0). Prereq EDSE 541 or PoA. In-depth study of characteristics of individuals experiencing receptive, integrative, and/or expressive learning disabilities. Implications for educational intervention. Field experiences req.

646 Curriculum and Methods—Mental Retardation (3:3:0). Prereq grad stdg and PoA. Educational programming for the mentally retarded. Design, implementation and evaluation of current programs and procedures.

647 Medical and Health Aspects of Handicapping Conditions (3:3:0). Prereq EDSE 541 or PoA. Nature and causes of disabling and/or special health conditions. Examines screening and evaluation techniques, treatment goals and intervention procedures. Field experience req.

648 Introduction to Psychological Assessment (2:2:0) or (3:3:0). Prereq A basic course in tests and measurements. Explored are concepts, purposes, terminology and practices basic to standardized testing of school age youngsters. Emphasis is placed on examination of procedures and interpretation of group and individual screening instruments. Practice in scoring and interpreting tests is required.

649 Clinical Psychoeducational Assessment in Special Education (3:3:0). Section A: ED/LD Mildly and Moderately Handicapped. Section B: ECH/SPH Severely/Profoundly Handicapped and Early Childhood Handicapped. Section C: BMSE Bilingual/Multicultural Special Education. Prereq Section A and C, EDSE 648, EDSE 643 or 645 and EDSE 654 or 657. Section B: EDSE 648, EDSE 552, EDSE 647, EDSE 669 and EDSE 659 or 66L. Administration, scoring and interpretation of education evaluation instruments with emphasis on the generated educational plan and written report. Supervised experiences req.


659 Curriculum and Methods—Early Childhood (3:3:0). Prereq PoA. Emphasis on planning, organizing, implementing and evaluating programs for handicapped children ages two to eight. Concurrent enrollment for one sem hr in EDSE 790: Internship recommended.

661 Curriculum and Methods—Severely Profoundly Handicapped (3:3:0). Prereq PoA. Formulation, implementation and evaluation of individualized educational programs for severely/profoundly handicapped individuals. Concurrent enrollment for one sem hr in EDSE 790: Internship recommended.

665 Family Intervention Programs for Handicapped Children (3:3:0). This course is designed to enable students to develop skills to strengthen the bonds between school and family for the benefit of the child. Course offers useful strategies and methods for promoting a genuine and effective partnership between school and family. Participants will learn about successful family educational training, programs and materials for helping parents of exceptional children. Course is appropriate for those preparing to work with handicapped children and their families. It is for those who wish to solve problems with families rather than for them.

668 Vocational and Leisure Education for Severely Handicapped (2:2:0). Prereq grad std. Focus on methods and techniques for vocational and leisure training of severely handicapped individuals in school and non-school settings.

669 Transdisciplinary Approach to Rehabilitation (2:2:0). Prereq grad stdg and PoA. Students are introduced to adaptive equipment and special techniques used by medical disciplines to enhance independence in the physically/multiple handicapped population. Incorporation of
therapeutic modalities into other settings is explored via the
educational/medical team approach.

670 Introduction to Gifted and Talented Education (3:3:0).
Examination of personal values, academic strengths and
leadership qualities of gifted and talented. Identification
techniques, articulation of personal philosophy and rationale
for gifted and talented education are studied.

671 a. Special Topics in the Education of Exceptional
Children: Counseling the Gifted (1:1:0). Intro to theory,
practices, and trends of guidance related to Gifted
and Talented Education.

671 b. Special Topics in the Education of Exceptional
Children: Identification and Evaluation in Gifted Education
(1:1:0). Interpretation of formal and informal measuring
developed to identify gifted and talented students and
study of screening models adapted to individual program
needs.

671 c. Special Topics in the Education of Exceptional
Children: Legislation Related to Gifted and Talented
Education (1:1:0). Examination of current federal, state and
local legislation related to gifted and talented education.
Procedures for implementing legislation.

671 d. Special Topics in the Education of Exceptional
Children: Creative Methods of Solving Problems (1:1:0).
Systematic creative methods of problem solving processes
will be learned cognitively and experientially.

672 Models and Methods of Teaching in Gifted and
Talented Education (3:3:0). Study of theory and practice of
gifted and talented education in elementary and secondary
education. One-half course time will be an internship in
which theoretical principles are applied to classroom
settings. Theories studied incl models for teaching,
methods, individualization, group procedures and aspects of
creativity.

673 Curriculum Design and Research in Gifted and Talented
Education (3:3:0). Curriculum design, implementation and
evaluation with a strong research component to prepare for
development of a research paper which becomes the
culmination of the degree in gifted and talented education.

674 Seminar in Gifted and Talented Education (3:3:0).
Prereq EDSE 790 and/or Po special education program
committee. Topics incl innovative research studies, methods
of research, program design, evaluation, thought processes,
creative studies. Each student designs, implements and
presents a project designed to contribute to the
improvement of Gifted and Talented Education. Req
seminars scheduled throughout year.

782 Comprehensive Topics in Special Education: Trends and
Issues (2:2:0). Prereq PoA and Po Special Education
Committee. Designed to synthesize course work, theory and
practical application. Focus on current trends and issues in
special education. Students must pass this course to grad.
May be repeated twice. This course replaces the traditional
comprehensive examination and is offered only in Fall and
Spring.

790 Internship in Special Education (1-6:0:0). Prereq Po the
Special Education Committee. Students are req to enroll in a
two-credit, on- campus internship prior to field placement.
In addition, students complete field internships in two
separate settings for two cr each (a total minimum of 12
weeks). Applications for field internship are due as follows:
Fall—April 15
Spring—September 15
Summer—February 15

For field enrollment the student must have completed all
specialization courses with no grade lower than B.
Supervised internship incl the design and implementation of
educational programming for handicapped youngsters in a
public school, approved private school, hospital, institution
or clinic.
English

Faculty

Adamson, Douglas, Ph.D., Georgetown University, 1980; Assistant Professor

Bausch, Richard C., M.F.A., University of Iowa, 1975; Assistant Professor

Bergmann, Johannes D., Ph.D., University of Connecticut, 1969; Associate Professor

Brown, Lorraine A., Ph.D., University of Maryland, 1968; Professor

Brown, Stephen J., Ph.D., Yale University, 1959; Professor

Brunette, Peter C., Ph.D., University of Wisconsin, 1975; Associate Professor

Cohn, Jan K., Ph.D., University of Michigan, 1964; Professor

Comito, Terry A., Ph.D., Harvard University, 1968; Associate Professor

Foreman, Joel E., Ph.D., The George Washington University, 1975; Associate Professor

Foster, John B., Ph.D., Yale University, 1974; Associate Professor

Gallehr, Donald R., Ph.D., The Catholic University of America, 1974; Associate Professor

Garson, Helen S., Ph.D., University of Maryland, 1967; Professor

Goodwin, Stephen H., M.A., University of Virginia, 1969; Associate Professor

Gras, Vernon W., Ph.D., University of Chicago, 1967; Professor

Grossberg, Frederick A., Ph.D., Harvard University, 1975; Associate Professor

Hammond, Jeffrey A., Ph.D., Kent State University, 1979; Associate Professor

Hodges, Devon L., Ph.D., State University of New York at Buffalo, 1979; Assistant Professor

Holisky, Dee A., Ph.D., University of Chicago, 1980; Assistant Professor

Horwitz, Howard, Ph.D., University of California, Berkeley, 1984; Assistant Professor

Irvine, Lorna M., Ph.D., The American University, 1977; Assistant Professor

Kaplan, Deborah, Ph.D., Brandeis University, 1979; Associate Professor

Karlson, Robert Emil, Ph.D., The George Washington University, 1970; Associate Professor

Keaney, Winifred G., Ph.D., University of Maryland, 1975; Associate Professor

Kelley, Michael R., Ph.D., The Catholic University of America, 1970; Professor

Klappert, Peter, M.F.A., University of Iowa, 1968; Associate Professor

Kuebrich, David L., Ph.D., University of Chicago, 1973; Associate Professor

Lewis, Roger D., A.M., Indiana University, 1968; Associate Professor

Masse, Michelle A., Ph.D., Brown University, 1981; Assistant Professor

Melosh, Barbara, Ph.D., Brown University, 1979; Assistant Professor

Molin, S. Eric, Ph.D., University of Pennsylvania, 1956; Professor

Nadeau, Robert L., Ph.D., University of Florida, 1970; Associate Professor

Nelson, Marie W., Ed.D., University of Georgia, 1981; Assistant Professor

O'Connor, John S., Ph.D., University of Virginia, 1974; Associate Professor

Owens, Collin D., Ph.D., Kent State University, 1975; Associate Professor

Palmieri, Anthony F., Ph.D., University of Maryland, 1974; Associate Professor

Radner, John B., Ph.D., Harvard University, 1966; Associate Professor

Rutledge, Amelia A., Ph.D., Yale University, 1974; Associate Professor
Shreve, Susan R., M.A., University of Virginia, 1969; Associate Professor

Story, Patrick L., Ph.D., Northwestern University, 1968; Associate Professor

Sypher, Eileen B., Ph.D., University of Connecticut, 1976; Assistant Professor

Thaiss, Christopher J., Ph.D., Northwestern University, 1975; Associate Professor

Tsukui, Nobuko, Ph.D., University of Nebraska, 1967; Associate Professor

Williams, Charles K., B.A., University of Pennsylvania, 1959; Professor

Yocom, Margaret, Ph.D., University of Massachusetts, 1980; Associate Professor

The Department of English offers graduate study designed to provide professional training in the study and practice of writing and literature to students with widely differing aims. The M.A. in English (30 semester hours) provides concentrations in the following areas: (1) Literature, (2) Professional writing and editing, (3) The writing of fiction and poetry, and (4) The teaching of writing and literature. The department also offers a terminal degree, the M.F.A. in creative writing (48 semester hours). In addition, the department offers an M.A. with a concentration in linguistics, a certificate in the teaching of English as a second language (TESL, 15 semester hours) and courses as part of the Doctor of Arts in Education degree.

English, M.A.

Admission Requirements

In addition to fulfilling Graduate School admission requirements, applicants must submit two copies of a 1,000-word writing sample and two letters of recommendation. The writing sample may be a paper written for an undergraduate class or any other material that gives evidence of writing skills. In addition to the writing sample requirement, applicants for the Concentration in Professional Writing and Editing must submit a statement of purpose (no more than 750 words) and two copies of a 10- to 15-page portfolio of their nonfiction work (a technical or business report, an essay, a term paper, an editing project, or any other material reflecting the student's interests and skills in nonfiction writing). Applicants for the Concentration in the Writing of Fiction or Poetry must submit, in addition to the 1,000-word writing sample, two copies of a portfolio consisting of up to 10 pages of poetry or 20 pages of fiction. Applicants may submit scores on the GRE when they believe those scores will lead to a clearer presentation of their qualifications. Those with undergraduate majors in disciplines other than English are encouraged to apply, but may be required to make up deficiencies before entering the program.

Degree Requirements

Students must successfully complete 30 semester hours of credit in graduate English courses. With the approval of the department, up to six hours of graduate credit in courses in related disciplines may be substituted for six hours in English.

General Requirements for all Concentrations

1. ENGL 701 (normally in the first semester of study).

2. Nine hours in literature courses, including at least three hours of Master’s Seminar (either ENGL 790, Topics in Literary History, or ENGL 791, Themes, Modes and Genres). For the Concentration in the Teaching of Writing and Literature only, ENGL 610 may be used to fulfill three hours of the literature requirement.

Students who have not completed 12 hours of undergraduate credit or its equivalent) in a foreign language must either do so or demonstrate equivalent proficiency by passing a translation test administered by the English department.

Concentration Requirement (one Concentration must be completed)

1. Concentration in Literature.
   a. Three hours in critical theory at the 600–700 level.
   b. Three hours of Master’s Seminar in addition to those used to satisfy the general requirements. Students in this concentration should complete both ENGL 790 (Topics in Literary History) and ENGL 791 (Themes, Modes, and Genres).
   c. Nine hours in a core program organized by period, genre, theme, or some other principle approved by the student’s adviser and the Director of Graduate Studies in English. These hours will customarily be in addition to those used to satisfy the general requirements. In two courses of the core program, the candidate must write an M.A. paper, a substantial paper on a topic agreed upon with the course instructor at the beginning of the semester.
The M.A. papers must receive a grade of B or better, and will be filed with the Department of English.

d. Three hours of electives.
e. Optional: six hours of thesis may be substituted for the core program.

2. Concentration in Professional Writing and Editing.
   a. Three hours in nonfiction writing.
   b. Nine hours in professional courses: e.g., editing, technical writing, scientific writing, internship in writing or editing, or Northern Virginia Writing Project.
   c. Three hours of electives in writing or literature.
   d. Three hours of thesis.

3. Concentration in the Writing of Fiction or Poetry.
   a. Three hours in Form of Fiction or Form of Poetry.
   b. Six hours of workshop in this genre.
   c. Three hours of thesis in this genre.
   d. Six hours of electives in writing or literature.

4. Concentration in the Teaching of Writing and Literature.
   a. Six hours in writing courses.
   b. Three hours in linguistics.
   c. Three hours in the teaching of writing and three hours in the teaching of literature.
   d. Three to six hours of electives from literature or writing; alternatively, a thesis may be arranged through the student's adviser and the Director of Graduate Studies in English.

English: Linguistics, M.A.

The M.A. degree in English: Linguistics is an interdisciplinary program that combines courses in linguistics with courses in some related area of language study such as teaching English as a second language, bilingual education, or foreign language teaching. The course of study is designed to prepare students for teaching in one of these fields or for doctoral work. The Certificate in Teaching English as a Second Language can be earned concurrently.

Admission Requirements

The admission requirements are the same as those for the other concentrations in the Master of Arts in English. Students with undergraduate majors in any field are encouraged to apply. There are no specific prerequisites.

Degree Requirements

Students must successfully complete 30 semester hours of graduate credit distributed as follows:

1. Fifteen hours in the following core courses: ENGL 520, 690, 691, 785, 786. Candidates in the TESL program will substitute ENGL 522 for ENGL 786.

2. Fifteen hours of graduate electives, chosen in consultation with an adviser, which reflect one or more areas of language study. The electives can be in such areas as literary criticism, bilingual education, or a foreign language, and may include six hours of thesis.

Students who have not already completed 12 hours of undergraduate credit (or its equivalent) in a foreign language must either do so or demonstrate equivalent proficiency by passing a translation test administered by the English department.

See section on "Certificates, Programs, and Additional Graduate Courses" for additional information on the TESL program.

Creative Writing, M.F.A.

Admission Requirements

In addition to fulfilling Graduate School admission requirements, applicants must submit two letters of recommendation, two copies of a 1,000-word nonfiction writing sample, and two copies of a portfolio of fiction and/or poetry. The nonfiction writing sample may be a paper written for an undergraduate class or any other work that gives evidence of basic writing skills. The additional portfolio should contain up to 20 pages of poetry or 50 pages of fiction.

Degree Requirements

Students must successfully complete 48 semester hours of graduate credit, including:

1. Three hours in ENGL 701

2. Twelve hours in literature, including at least three hours of Master's Seminar (ENGL 790, Topics in Literary History, or ENGL 791, Themes, Modes, and Genres)

3. Twelve to 18 hours of writing seminars in one genre, including either Form of Poetry or Form of Fiction and at least 3 hours of Advanced Workshop (ENGL 750 or 751)

4. Three to nine hours in other genres

5. Three to six hours in nonliterary art
6. One to three hours in internship (optional)
7. Six hours in thesis.

Up to nine hours of electives may be chosen in consultation with the writing program staff.

Students must pass an M.F.A. exam based on the authors they have chosen. The authors are to be selected in collaboration with the Writing Faculty any time before the completion of 32 hours of coursework. The exam is to be completed at least one semester before submitting thesis.

Students who have not completed 12 hours of undergraduate credit (or its equivalent) in a foreign language must either do so or demonstrate equivalent proficiency by passing a translation test administered by the English department.

Basic Discipline in English as Part of Doctor of Arts in Education

Admission Requirements

In addition to material requested by the Graduate School and the Department of Education, applicants planning a Basic Discipline in English must present:

1. Scores from the aptitude section of the GRE
2. A writing sample of approximately 1,000 words
3. A letter of recommendation from a person with specific knowledge of the applicant's work in English.

While a B.A. or an M.A. in English is desirable, an applicant must have earned the following minimum requirements:

1. Fifteen hours of graduate or upper-division undergraduate work in English or American literature
2. Three hours in graduate or upper-division undergraduate work in Linguistics or History of the Language
3. Three hours of graduate work in Bibliography and Research and three hours of graduate work in Critical Theory.

Applicants with a particular interest in a concentration in writing are also required to present evidence of advanced work in the field. Especially qualified students who lack certain requirements listed above may be admitted and allowed to enroll in the appropriate English courses on the graduate level. These courses will not be counted toward the Doctor of Arts in Education.

Degree Requirements

1. A minimum of six hours of ENGL 800, studying material relevant to the student's individual goals.
2. Three hours of independent research, directed by the student's D.A.Ed. adviser.
3. A substantial research paper (three hours), to be written under the direction of the D.A.Ed. adviser and at some stage shared and discussed with other students in the D.A.Ed. program.

Non-Degree Status

Persons who are not yet certain about their plans for graduate study may apply for Non-Degree Status. Only an undergraduate transcript is required for this application.

English Courses (ENGL)

503 Theory and Practice of Editing (3:3:0). Prereq 6 hr of English courses numbered above 300, incl one advanced writing course—309, 310, 397, 398, 458, 464, 489, 497 or Po.D. Instruction in revising, editing, and preparing specialized writing for printing. Emphasis on methods of achieving clarity, accuracy, and completeness. Lecture and discussion on editing and printing techniques, practical exercise in revision, layout, and production.

504 Internship in Writing and Editing (3:3:0). Prereq Open to senior English majors and grad students pursuing the M.A. in English or the M.F.A.. Contact the English Department one sem prior to enrollment. Internships are approved work-study positions in writing or editing established by the English Department with specific employers. Variable cr. Variable prereqs.

507 (EDCI 507) Internship in Applied Linguistics (3:0:0). Prereq ENGL 521 or EDCI 519. Contact the English Department one sem prior to enrollment. Internships provide experience working in a language teaching program or an educational research organization.

511 Styles and Modes in Literary History (3:3:0). An historical consideration (not a survey) of some of the principal styles, in prose and poetry, of English and American Literature.

512 (PHIL 530) Issues in Literature and Philosophy (4:3:1). Prereq grad or senior stdg, 6 hours of upper-level English, 6 hours of philosophy and Pol. An interdisciplinary seminar that offers students an opportunity to arrive at a personal synthesis of work previously done in philosophy and literature. The topic will change yearly but will focus on themes or methodologies common to both disciplines.
513 Advanced Special Topics in English (3:3:0). Prereq 15 hours of advanced undergraduate English courses and PoD or possession of the baccalaureate degree. An intensive study of selected topics in English and American literature. May be repeated for cr with PoD.

520 (620) Descriptive Linguistics (3:3:0). An intro to the terminology and methodology of modern linguistic science and to traditional structural analysis of English phonology, morphology, and syntax. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 620.

521 (621) Applied Linguistics: Teaching English as Foreign Language (3:3:0). Prereq An introductory linguistics course (which may be taken concurrently). Theories and basic principles of the acquisition of a second language, especially as they relate to the English language, supplying students with methods of teaching English to speakers of other languages. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 621.

522 Modern English Grammar (3:3:0). Prereq A or B in ENGL 391, 485, 520, or equiv. Overview of the structure of modern English beginning with word classes and ending with transformational analyses of complex sentences. Most topics are introduced as problems of language description; in solving them, principles of syntactic argumentation are demonstrated as well. Students learn to tap their own intuitions about English in order to analyze grammatical structure.

551 Literary Criticism (3:3:0). Studies of major critical theories and techniques with emphasis on the twentieth century.

556 (555) Literary Style (3:3:0). Theory and practical analysis of English literary style. Several methodologies, incl impressionistic, rhetorical, and linguistic, are examined and applied to the language of various literary texts, incl essays, poems, and novels.

557 Old English (3:3:0). Study of Old English language, incl its phonology, morphology, syntax, and lexicon, aimed at preparing students to read Anglo-Saxon literature in its original form. Accompanied by reading from Anglo-Saxon prose and poetry of the seventh through the eleventh centuries. Selections from The Anglo-Saxon Chronicle, Aelfric’s Homilies, The Legend of St. Andrew, and other prose works, as well as such verse as The Dream of the Road, The Seafarer, and Judith, are read and translated.

564 Form of Poetry (3:3:0). Prereq ENGL 464 or equiv and PoL. Students must submit a typed manuscript of original poetry at least one week before they intend to register. For specific guidelines, consult the department’s Course Description Booklet, the instructor, or the department secretaries. Intensive study of and practice in the formal elements of poetry through the analysis of models and weekly or biweekly writing assignments. Intended for students already writing original fiction. Students study rhyme, meter, rhythm and other musical elements of poetry, lineation, stanza pattern, traditional and experimental forms, free verse and open-form composition, lyric, narrative, and dramatic modes.

566 (565) Form of Fiction (3:3:0). Prereq ENGL 465 or equiv and PoL. Students must submit a typed manuscript of original fiction at least one week before they intend to register. For specific guidelines, consult the department’s Course Description Booklet, the instructor, or the department secretaries. Intensive practice in the formal elements of fiction, through the analysis of models and weekly or biweekly writing assignments. Intended for students already writing original fiction. Students study description, narration, plot, dialogue, voice, point of view, style, epiphany, and antithetical techniques.

581/PSYC 581 Psycholinguistics (3:3:0). Prereq An introductory linguistics or psychology course Pol. Study of mental and psychological aspects of human language, incl aphasia, association, autism, language acquisition, verbal concept formation, and perception.

582 (580) Applied Linguistics (3:3:0). Prereq A or B in ENGL 391, 485 or 520 Pol. Study of the applications of linguistic science to the teaching of English language. Attention is given to linguistic foundations of teaching English as a second language, findings of linguistics with regard to composition instruction, and ways in which linguistics can support the teaching of literature and literary style.

592 (392) History of the English Language (3:3:0). An intro to the history and development of the English Language, incl study of Indo-European language family and various stages of the English language from Old and Middle English to Early and Recent Modern English and American English; emphasis on historical principles and theory of language change as it affects phonology, morphology, syntax, and semantics.

610 Proseminar in Teaching the Reading of Literature (3:3:0). Methods of teaching literature. Incl study of methods of literary analysis and ways of developing student responses to literature, with some classroom practice. (Does not satisfy VA certification req in diagnostic or developmental reading.)

613 Technical and Scientific Writing (3:3:0). Prereq ENGL 616 or PoD. Intensive study of theory and practice of technical and scientific writing, with emphasis on writing for a variety of audiences. Focus on writing and evaluating formal reports, articles for lay as well as technical audiences, proposals, theses, manuals, and other forms of technical prose.

614 Internship in the Teaching of Writing (1:0:0). Prereq open to graduate students currently enrolled in ENGL 615-A. Subject to approval of the CTC Director or the Writing Place Director. Qualified students will serve as tutors for three hours a week in the University’s Composition Tutorial Center under the guidance of the CTC Director or in the English Department Writing Place under the guidance of the Writing Place Director. A journal on their experience will be kept and a paper submitted at the end of the semester synthesizing what they have learned and describing their progress as teachers. Not repeatable for credit.

615 Proseminar in Composition Instruction (3:3:0). Methods of teaching expository writing. Incl consideration of planning of courses, practice in teaching and in grading papers, and study of lab method of instruction.

616 The Writing of Nonfiction (3:3:0). Writing of original essays, biographies, documentaries, reports, and other forms of nonfiction.
617 Poetry Writing Workshop (3:3:0). Prereq ENGL 564 or equiv and Pol. Students must submit a typed manuscript at least one week prior to registration. For specific guidelines, consult the department's Course Description Booklet, the instructor or the department secretaries. Intensive practice in the craft of poetry and study of the creative process. Intended for students already familiar with traditional and contemporary poetic modes and already writing original poetry. At the discretion of the instructor, reading may be req. May be repeated for cr with PoD.

618 Fiction Writing Workshop (3:3:0). Prereq ENGL 566 (565) or equiv and Pol. Students must submit a typed manuscript at least one week prior to registration. For specific guidelines, consult the department's Course Description Booklet, the instructor or the department secretaries. A workshop course; intensive practice in creative writing and study of the creative process. Concentrates on a specialized literary type other than the short story or poetry (i.e., the essay, playwriting, filmwriting, children's literature, travel literature, autobiography, the gothic novel, translation) and the concentration will be announced in the Department's Course Description Booklet. Intended for students already writing original fiction. At the discretion of the instructor, reading may be req. May be repeated for cr with PoD.

619 Special Topics in Writing (3:3:0). Prereq two grad writing courses and/or Pol. Students must submit a typed manuscript at least one week prior to registration. For specific guidelines, consult the department's Course Description Booklet, the instructor or the department secretaries. A workshop course; intensive practice in creative writing and study of the creative process. Concentrates on a specialized literary type other than the short story or poetry (i.e., the essay, playwriting, filmwriting, children's literature, travel literature, autobiography, the gothic novel, translation) and the concentration will be announced in the Department's Course Description Booklet. Intended for students already writing original creative work. May be repeated for cr with PoD.

622 The Structure of Contemporary American English (3:3:0). An introductory survey of the phonology, morphology and syntax of contemporary American English, with discussion of language attitudes and dialect variation due to region, social class and sex. Course is intended primarily for non-linguistics majors; it cannot be taken for credit by students who have taken both ENGL 520 (620) and ENGL 522.

625 Studies in English Medieval Literature (3:3:0). Selected literary authors, works or movements, generally excluding Chaucer, from between 1300 and 1500, studied in Middle English. Content varies. May be repeated for cr with PoD.

630 Studies in English Renaissance Literature (3:3:0). Selected literary authors, works, or movements, generally excluding Shakespeare and Milton, of the English Renaissance. Content varies. Recent offerings include: Women in Shakespeare; The Golden Age and Earthly Paradise; and The Pastoral Tradition. May be repeated for cr with the PoD.

631 (785) Seminar in Shakespeare (3:3:0). Intensive study of the achievement of Shakespeare and major critical approaches to his work. Usually Comedies and Histories taught one term, Tragedies and Romances the other. May be repeated for cr with PoD.

635 Studies in Eighteenth-Century English Literature (3:3:0). Selected English literary authors, works or movements of the eighteenth century. Content varies. Recent offerings include: Johnson and his Circle; Sympathy, Selfishness, and Self-Realization; and Sexual Motifs in 18th-century Poetry, Prose, and Drama. May be repeated for cr with the PoD.

640 Studies in Nineteenth-Century English Literature (3:3:0). Selected English literary authors, works or movements of the nineteenth century. Content varies. Recent offerings include: Romantic Visionary Poets; Youth and Identity; Romantic Self-consciousness; and Jane Austen, Charlotte Bronte, George Eliot. May be repeated for cr with the PoD.

645 Studies in Twentieth-Century English Literature (3:3:0). Selected English literary authors, works or movements of the twentieth century. Content varies. Recent offerings include: developments since WW II; Contemporary British Drama; British Novel to WW II. May be repeated for cr with the PoD.

650 Studies in Seventeenth- and Eighteenth-Century American Literature (3:3:0). Selected literary authors, works, or movements of colonial and earlyfederalist America. Content varies. May be repeated for cr with the PoD.

655 Studies in Nineteenth-Century American Literature (3:3:0). Selected American literary authors, works or movements of the nineteenth century. Content varies. Recent offerings include: The American Renaissance and The Novel and American Society. May be repeated for cr with the PoD.

660 Studies in Twentieth-Century American Literature (3:3:0). Selected American literary authors, works, or movements of the twentieth century. Content varies. Recent offerings include: The Federal Theatre Project; Gothicism in Southern Literature; Physics and Metaphysics in the Modern Novel; and The Wasteland Theme. May be repeated for cr with the PoD.

666 (770) Seminar in Major Figures of English Literature before 1800 (3:3:0). Intensive study of the work of one or two major figures of English literature before 1800. Content varies. Recent offerings include: Chaucer; Milton; Blake; Fielding and Sterne. May be repeated for cr with PoD.

667 (775) Seminar in Major Figures of English Literature after 1800 (3:3:0). Intensive study of the work of one or two major figures of English literature after 1800. Content varies. Recent offerings include: Yeats; V. Woolf; Dickens and Gissing; Joyce; Elizabeth Gaskell and C. Bronte. May be repeated for cr with PoD.

668 (780) Seminar in Major Figures of American Literature (3:3:0). Intensive study of the work of one or two major figures of American literature. Content varies. Recent offerings include: Stevens; Hemingway; Eliot and Pound; Melville; Whitman; Bellow and Singer. May be repeated for cr with PoD.

670 Film History and Theory (3:3:0). Prereq Intro film course or Pol. Advanced study of the history of film art and major theories concerning the nature of film. Specific topic varies. May be repeated for cr with PoD.

675 Feminist Criticism and Theory (3:3:0). Seminar designed for students who desire an intro to criticism and
theory which studies the role of gender in literature and in the practice of interpretation.

685 Selected Topics, Movements or Genres of Literature in English (3:3:0). Content varies. May be repeated for cr with PoD.

690 (531) Generative Phonology (3:3:0). Prereq A or B in ENGL 391, 520 or Pol. Sound systems of English and other languages from the perspective of generative phonology. Topics incl phonetic basis of phonology, distinctive features and phonological notation, natural processes, and rule ordering.

691 (535) Theories of Language (3:3:0). Prereq A or B in ENGL 391, 485, 520 or Pol. Study of the history and development of the science of linguistics. Important theories of language are surveyed incl those of Saussure, Bloomfield, Chomsky, and others.

695/EDUC 695 Northern Virginia Writing Project Inservice Program (1,2,3:0:0). Prereq Admission to the grad prog or PoD. Offered at the request of a school division or other education agency. Content varies. May be repeated for cr with PoD, but no more than six sem hr of cr in ENGL 695/EDUC 695 and/or ENGL 699 may be applied toward a master's degree in English.

696/EDUC 696 Northern Virginia Writing Project Teacher/Research Seminar (3:0:0). Prereq ENGL 695/EDUC 695 or NVWP Summer Institute. Designed to acquaint classroom teachers with current theory relating to writing and the teaching of composition. Focus on development of a proposal investigating some aspect of the composing process. Teachers who have developed a proposal prior to enrolling will conduct the research during the course.

697/EDUC 697 Northern Virginia Writing Project Theory of Composition (3:3:0). Prereq ENGL/EDUC 695 or NVWP Summer Institute. Designed to acquaint classroom teachers with current theory relating to writing and the teaching of composition. Focus is on making explicit the theories of the participants, on reading the works of leading theorists, and on developing a statement describing the implications of theoretical consistency in the teaching of writing.

699 Workshop in English (1-3:0:0). Prereq Admission to the grad prog or PoD. Concentrated workshops, educational tours, and special seminars dealing with selected topics in writing, linguistics, film, the electronic media and literature written in English. All tours are optional and may be replaced by specific work conducted on campus. May be repeated for cr with PoD, but no more than six sem hr of cr in ENGL 699 may be applied toward a master’s degree in English.

701 Literary Scholarship (3:3:0). Methods and purposes of literary research, incl study of library methodology, use of critical bibliographies, techniques of textual criticism, and evaluation of various approaches to literary history.

705 Literary Theory and Criticism (3:3:0). Major theories of literature and methods of analyzing and evaluating literary works. Content varies. Recent offerings incl: Recent Trends in Critical Theory, American, New Criticism, and Marxist Criticism. May be repeated for cr with PoD.

750 Advanced Workshop in Poetry Writing (3:3:0). Prereq ENGL 564 and ENGL 617 and Pol. Students must submit a typed manuscript at least one week prior to registration. For specific guidelines, consult the department's Course Description Booklet, the instructor, or the department secretaries. Intensive practice in the craft of poetry for experienced writers. May be repeated for cr with PoD.

751 Advanced Workshop in Fiction Writing (3:3:0). Prereq ENGL 566 and ENGL 618 and Pol. Students must submit a typed manuscript at least one week prior to registration. For specific guidelines, consult the department's Course Description Booklet, the instructor, or the department secretaries. Intensive practice in the craft of fiction for experienced writers. May be repeated for cr with PoD.

786 (623) Semantics and Pragmatics (3:3:0). Prereq A or B in ENGL 522 or Pol. Developments in theoretical linguistics which explore how language form is related to meaning and to context. Topics incl reference, lexical semantics, logic for linguists, truth conditions and sentential meaning, presuppositions, and speech acts.

786 (624) Syntax (3:3:0). Prereq ENGL 520 (620), 491 (391), and/or Pol. The study of transformational grammar. This course is intended to acquaint students with a broad range of syntactic phenomena (mainly from English) and with the style of argumentation and the notation system used in contemporary syntactic analysis.

790 Masters Seminar: Topics in Literary History (3:3:0). Prereq 9 hours of graduate English courses or PoD. Historical approaches to an understanding of literature and its relation to other elements of culture. Specific topics vary from term to term. May be represented for cr with PoD.

791 Masters Seminar: Themes, Modes and Genres (3:3:0). Prereq 9 hours of graduate English courses or PoD. Nonhistorical approaches to an understanding of literature and its relation to other elements of culture. Specific topics vary from term to term. May be repeated for cr with PoD.

798 Directed Reading and Research (3:0:0). Prereq Open only to degree students who have completed 15 hr incl ENGL 701 and have prereq. Reading and research on a specific project under the direction of a department member. Oral or written report req. May be repeated for cr with PoD.

799 Thesis (3-6:0:0). Students who take ENGL 798 in order to develop a thesis topic and then elect the thesis option receive three cr for ENGL 799 upon completion of the thesis. Students who do not take ENGL 798, or who take it in order to work on a project unrelated to their thesis, receive up to six cr for ENGL 799 upon completion of the thesis.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in English. Program of studies designed by student's discipline director and approved by student's doctoral committee which prepares the student to do research and writing in the current area of interest of the discipline director. The student presents a research paper in a subsequent D.A.Ed. summer seminar. May be repeated as req.
Foreign Languages and Literatures

Faculty
Aguera, Victorio G., Ph.D., The Catholic University of America, 1971; Professor
Berrosa, Rei, Ph.D., University of Pittsburgh, 1983; Assistant Professor
Chamberlain, Jeffrey T., Ph.D., University of Illinois, 1982; Assistant Professor
Cordero, Anne D., Ph.D., The George Washington University, 1968; Associate Professor
Elsun, Esther N., Ph.D., Rice University, 1969; Professor
Francescato, Martha P., Ph.D., University of Illinois, 1970; Professor
Goldin, Mark G., Ph.D., Georgetown University, 1968; Associate Professor
Hazera, Lydia D., Ph.D., The George Washington University, 1971; Associate Professor
LePage, Raymond G., Ph.D., The George Washington University, 1972; Associate Professor
Meyer, Henry P., Ph.D., University of Maryland, 1970; Associate Professor
Tedder, James D., Ph.D., University of North Carolina, 1967; Associate Professor
Wagner, Irmgard, Ph.D., Harvard University, 1970; Associate Professor
Wekerle, Inge B., Ph.D., The George Washington University, 1975; Assistant Professor
Willis, William S., Doctorat de l'Universite, University of Paris, 1951; Professor

Foreign Languages and Literatures, M.A.

The master of arts in foreign languages is designed to meet the diverse interests and career needs of several types of students. Those interested primarily in language and the enhancement of teaching skills may choose the language/linguistics/methodology orientation. Students interested primarily in literary studies may select the literature/literary criticism orientation. Both offer the further option of concentrating in one or two languages (French, German, or Spanish). The third orientation is Spanish/Bilingual-Multicultural Education, offered in cooperation with the Department of Education.

Admission Requirements
In addition to satisfying the general admission requirements of the Graduate School, an applicant seeking degree status must hold a baccalaureate degree with a major in French, German, or Spanish, have at least a 3.00 grade-point average (on a 4.00 scale) in the major, and submit two letters of recommendation from persons familiar with the applicant's qualifications. An applicant whose baccalaureate degree was earned in another field or who otherwise does not meet the above requirements, but who provides evidence of a capacity to pursue graduate study, is encouraged to apply and may be admitted to the program with provisional status. If admitted under provisional status, an applicant may be asked to appear for a personal interview and to take the appropriate part(s) of the Graduate Record Examination. This applicant may also have undergraduate deficiencies to make up before being advanced to degree status.

Degree Requirements
A candidate who has elected to do work in one language must complete a program of 30 semester hours of study. If work is done in two languages or in Spanish/Bilingual-Multicultural Education, a candidate must complete a program of 36 semester hours. In all cases, a student must meet the specific requirements of the orientation he or she has selected. Six of the total hours may be earned with a thesis. The candidate must also pass a final M.A. examination.

Orientations and Their Requirements:

Language/Linguistics/Methodology with concentration in one language (30 hours)
History of the Language (3)
Methodology: Language, Literature, Culture (9)
Materials and Methods of Scholarly Research (3)
Electives in the language field of concentration (15)

Language/Linguistics/Methodology with concentration in two languages (36 hours)
History of the Major Language (3)
History of the Minor Language (3)
Methodology: Language, Literature, Culture (9)
Materials and Methods of Scholarly Research (3)
Electives in the language fields of major concentration and minor concentration (18)
Literature/Literary Criticism with concentration in one language (30 hours)
History of the Language (3)
Literary Theory and Criticism (3)
Materials and Methods of Scholarly Research (3)
Literature covering three major periods (12)
Electives in the language field of concentration (9)

Literature/Literary Criticism with concentration in two languages (36 hours)
History of the Major Language (3)
Literary Theory and Criticism (3)
Materials and Methods of Scholarly Research (3)
Literature of the major language, covering three major periods (12)
Literature of the minor language (9)
Electives in the language fields of major and minor concentration (6)

Spanish/Bilingual-Multicultural Education
History of the Spanish Language (3)
Materials and Methods of Scholarly Research (3)
Language courses (6)
Sociolinguistics (3)
Methodology: Language, Literature, Culture (9)
Bilingual-Multicultural Education seminars (6)
Electives in Spanish (6)

Foreign Languages and Literatures Courses (FRLN)
510 Materials and Methods of Scholarly Research (3:3:0).
Prereq grad stdg or PoD. Use of basic bibliographical tools and methodologies necessary to do scholarly research in French, German, and Spanish. Taught in cooperation with the university library staff. Conducted in English.

600 Workshop in Foreign Languages (1-6:0:0). Prereq grad stdg or Pol. In-service workshops, tours, and seminars dealing with selected topics in literature, language, bilingualism, culture, methodology, etc. May not normally be applied toward the M.A. in foreign languages.

620 Literary Theory and Criticism (3:3:0). Study of the nature of the literary work; analysis of contemporary critical approaches to literature. May not be taken for credit by students who previously received credit for FRLN 615.

645 (545) The Study and Teaching of Literature (3:3:0).
Current methodologies of literary analysis. Emphasis on role of literature in foreign language programs and on providing students with various methods of teaching literature. This course may not be taken by anyone who has previously taken and satisfactorily completed FRLN 545.

650 The Teaching of Culture in Foreign Language Programs (3:3:0). Purpose and methods of the study of culture, with emphasis on strategies and techniques for teaching culture in foreign language programs.

660 Approaches to the Study of Language (3:3:0). The discipline of linguistics and its relationship to other disciplines, incl study of generative grammar with syntactic problems drawn from commonly taught foreign languages.

665 Theory of Translation (3:3:0). Lectures on the nature and function of the translating process. Evaluations of theories of translation with respect to text-typology. Critiques of selected translations from the target languages to English and vice versa.

670 (570) Foreign Language Learning and Teaching (3:3:0).
Theories, methods, and strategies of second and foreign language learning and teaching. This course may not be taken by anyone who has previously taken and satisfactorily completed FRLN 570.

French (FREN)
515 Medieval French Literature (3:3:0). Intensive study of the outstanding literary works of the Middle Ages. Course work in French.

Selected writers, works, themes or trends of French literature in the classical era. Content varies. Course work in French.

Selected writers, works, themes or trends of French literature in the eighteenth century. Content varies. Course work in French. May be repeated for cr with PoD.

519 Studies in Nineteenth-Century Literature (3:3:0).
Selected works, themes, genres and authors of nineteenth century French literature. Content varies. Course work in French. May be repeated for cr with PoD.

525 Studies in Modern French Literature (3:3:0).
Selected writers, works, themes or trends of French literature in the modern era. Content varies. May be repeated for cr with PoD. A maximum of six hr of cr may be earned. Course work in French.

550, 551 Special Topics (3:3:0), (3:3:0). Specialized topic relating to French culture and literature. Content varies. Course work in French.


561 Old French (3:3:0). Study of Old French phonology, morphology, syntax, and lexicon, aimed at preparing students to read medieval French literature in original versions. Linguistic study complemented by reading of Old French verse and prose texts from the ninth through the thirteenth centuries.


575 Grammatical Analysis (3:3:0). Study of characteristic features of contemporary French. Examination of spoken and written French, incl syntactic analysis, distributional analysis, and generative-transformational grammar. Emphasis on problem areas for the American learner.

576 Advanced Translation (3:3:0). Advanced work in translation of topics selected from the humanities, the social and political sciences. Comparative terminology, sight
translation, and precis writing. The importance, function, and techniques of documentation in translation. Translations from French to English and English to French.


798 Directed Reading and Research (3:0:0). Prereq Open only to degree students who have completed at least 18 cr hr. Reading and research on a specific project under the direction of a department member. Oral or written report req.

799 Thesis (3-6:0:0). Students who take FREN 798 and then elect the thesis option receive three cr for FREN 799 upon completion of the thesis. Students who do not take FREN 798 receive six cr for FREN 799 upon completion of the thesis.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in French. Program of studies designed by the student’s discipline director and approved by the student’s doctoral committee to prepare the student to do research and writing in the current area of interest of the discipline director. The student presents a research paper in a subsequent D.A.Ed. summer seminar. May be repeated as req.

Also see FRLN listings.

Spanish (SPAN)

500 History of the Spanish Language (3:3:0). Scientific study of the evolution of the Spanish language from its origin in vulgar Latin to its present forms.

501 Applied Spanish Grammar (3:3:0). Analysis of Spanish grammar as a basis for teaching language skills. Terminology and methodology for the teaching of syntax are stressed.

502 Hispanic Sociolinguistics (3:3:0). Intro to sociolinguistics with emphasis on bilingualism and language contact in the Spanish-speaking world incl the U.S.


520 Studies in Medieval Spanish Literature (3:3:0). Intensive study of a major work or a literary genre of this period.

525 Studies in Renaissance Literature (3:3:0). Study of a literary movement or selected authors of the Spanish Renaissance.


540 Studies in Nineteenth-Century Literature (3:3:0). Study of a writer, genre, theme or movement of this period.

545 Studies in Hispanic Literature (3:3:0). Study of major writers in a particular generation or movement.

551 Special Topics in Spanish (3:3:0). Special studies in Spanish or Latin American language, literature or culture. Specific topics are announced in advance. May be repeated for cr with PoD.


565 Studies in Spanish American Drama (3:3:0). Study of playwrights who have made a major contribution to the development of the genre.


Also see FRLN course listings.

German (GERM)

518 Studies in Eighteenth- and Early Nineteenth-Century German Literature (3:3:0). Major authors, movements, and themes in eighteenth and early nineteenth century German literature. Literary theory and practice, historical background and critical reception. May be repeated for cr with PoD.

525 Studies in Modern German Literature (3:3:0). Writers, themes, or genres of modern German literature. May be repeated for cr with PoD.

550 Special Topics (3). Study of a special topic in the area of German language, literature or culture. Specific topics are announced in advance. May be repeated for cr with PoD.

560 History of the German Language (3:3:0). Development of the German language from the eighth century to the present. Phonological, morphological, and syntactic structures characteristic of the various stages of development.

798 Directed Reading and Research (3:0:0). Prereq Open only to degree students who have completed at least 18 cr hr. Reading and research on a specific project, under the direction of a department member. Oral or written report req.

799 Thesis (3-6:0:0). Students who take GERM 798 and then elect the thesis option receive three cr for GERM 799 upon completion of the thesis. Students who do not take GERM 798 receive six cr for GERM 799 upon completion of the thesis.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in German. Program of studies designed by student’s discipline director and approved by student’s doctoral committee which prepares the student to do research and writing in the current area of interest of the discipline director. The student presents a research paper in a subsequent D.A.Ed. summer seminar. May be repeated as req.

Also see FRLN listings.
Geographic and Cartographic Sciences

635 Seminar in *Don Quixote* (3:3:0). Intensive study of *Don Quixote* and the major critical approaches to the work.

650 Seminar in Twentieth-Century Drama (3:3:0). Study of major dramatists in the Generation of 1898 and in the contemporary theater.

655 Seminar in Twentieth-Century Prose (3:3:0). Intensive study of a major writer, theme or movement in the novel or the essay.


675 Seminar in Literature and Art (3:2:0). Comparative analysis of a literary theme or style in relation to other media (e.g., painting, architecture, film) for an integral understanding of the arts.

680 Seminar in Literature and Society (3:3:0). Intensive study of a literary topic, a genre or selected authors in relation to a given economic, social or political system in Spain or Latin America.

685 Seminar in Literature and Ideas (3:3:0). Study of major ideological-philosophical themes and their artistic expression in literature.

798 Directed Reading and Research (3:0:0). Prereq Open only to degree students who have completed at least 18 cr hr. Reading and research on a specific project, under the direction of a department member. Oral or written report req.

799 Thesis (3:6-0:0); (3:0:0). Students who take SPAN 798 and then elect the thesis option receive three cr for SPAN 799 upon completion of the thesis. Students who do not take SPAN 798 receive six cr for SPAN 799 upon completion of the thesis.

800 Studies for the D.A.Ed. (var cr). Prereq D.A.Ed. admission to study in Spanish. Studies designed by student’s discipline director and approved by student’s doctoral committee which prepares the student to do research and writing in the current area of interest of the discipline director. The student presents a research paper in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

See FRLN listing also.

Faculty

Andrews, Alice C., Ed.D., George Washington University, 1975; Associate Professor

Fonseca, James W., Ph.D., Clark University, 1974; Associate Professor

Hayden, Robert S., Ph.D., University of Georgia, 1979; Assistant Professor

Lindberg, Mark B., M.A., Kent State University, 1979; Instructor

Rundstrom, Robert, M.A., University of California at Northridge, 1980; Instructor

Geographic and Cartographic Sciences, M.S.

This program is offered by the Public Affairs Department. It is designed to research, technical or teaching fields related to geography or cartography who wish to improve their occupational skills; people with baccalaureate degrees in geography or cartography who desire to improve their skills before entering a career; and people who wish to earn a master’s degree as a prelude to additional graduate work in geography or cartography.

Admission Requirements

In addition to meeting all general requirements for admission to the Graduate School, students must have a B.A. or a B.S. in geography or cartography, or the equivalent. They must present GRE aptitude scores taken within five years. Three letters of recommendation and transcripts of all college course work must be submitted in support of the application and a brief “statement of interest” must be supplied. In addition to these general program requirements, an applicant must have completed a course in statistics. An applicant who does not have an undergraduate degree in geography or cartography must take the following before beginning graduate work: a course in physical geography, a course in human geography, a course in regional geography, a course in cartography and a course in statistics. Applicants who intend to elect a large number of highly technical cartography courses in their degree programs are advised that some preparation in elementary photogrammetry, FORTRAN or BASIC, calculus or matrix algebra is highly desirable.
Degree Requirements

A student must complete a core of six required courses (18 hours) in geographic and cartographic sciences (prefix GECA). These required courses are:

- GECA 553 Geographic Information Systems
- GECA 579 Remote Sensing
- GECA 585 Quantitative Methods
- GECA 652 Computer Applications in Cartography
- GECA 680 Seminar in Geographic Thought and Methodology
- GECA 785 Geographic Fieldwork

In addition to this core of technological and philosophical/methodological courses, students may choose from a number of GECA electives at the 500 level and above to complete their program. Careful choice of electives allows students to specialize in a subfield of geography. Up to six hours of work in closely related disciplines may also be applied to the degree with the approval of the department.

A thesis is optional in the M.S. in geographic and cartographic sciences. Students may elect to complete a thirty-three hour program which includes six hours of thesis, or they may complete thirty-six hours of course work with no thesis required. If the non-thesis option is selected, the student will be required to submit two research papers as evidence of proficiency at the graduate level. These papers will be included in the student's permanent file.

Geographic and Cartographic Sciences (GECA) Courses

Department of Public Affairs

503 Problems in Environmental Management (3:3:0). Prereq 6 hr of geography, incl GEOG 102. Case studies of the impacts of human activities on atmospheric, hydrologic, geomorphic and biotic processes.

505 Transportation Geography (3:3:0). Prereq 6 hr of geography. Structure, principles, location and development of world transportation. Critical role of transportation in moving people, goods and ideas at the international, national, regional and urban levels.

520 Geography for Teachers (3:3:0). Prereq grad stdg or Pol. Emphasis on problems and techniques in teaching geography and current developments in research, methodology and philosophy in the discipline.

540 Medical Geography (3:3:0). Prereq Graduate standing or PoD. A course in statistics. Spatial approaches to the study of health and disease. Topics covered include disease ecology, disease diffusion, and geographic perspectives on improved health care delivery.

551 Thematic Cartography (3:3:0). Prereq grad stdg or Pol. Analysis of the conceptual and perceptual properties of thematic maps. Emphasis on discussion of these properties in relation to problems in data manipulation, design, and map comparisons.

553 Geographic Information Systems (3:3:0). Prereq course in computer science and grad stdg, or PoD. Sources of digital geographic information, methods of storage and processing for cartographic display and geographical analysis.

554 History of Cartography (3:3:0). Prereq grad stdg or PoD. History of cartographic portrayal of the earth from ancient times through the 19th century, with emphasis on the interrelation of human culture, technological development and geographical knowledge as reflected in maps.

562 Analytic Photogrammetry (3:3:0). Prereq GEOG 414, a course in matrix algebra and grad stdg, or PoD. Analytic treatment of photogrammetric problems, incl least squares adjustments, image coordination refinements, collinearity equation, resection, relative orientation and analytic aerotriangulation.

579 Remote Sensing (3:3:0). Prereq course in physical geography or geology and course in aerial photo interpretation or Pol. Analysis of the nature of electromagnetic radiation, principles and operations of sensors, techniques and systems of correction, enhancement, and production of imagery. Interpretation and applications in geomorphic, atmospheric, hydrologic, vegetation, land use and regional analysis.

581 World Food and Population in Geographical Perspective (3:3:0). Prereq grad stdg or Pol. Topics incl malnutrition, population, regional disparities in growth rates and income distribution, food production and world hunger and area concentrations of ethnic minorities. Discussion of population policies, with emphasis on Third World countries.

583 Spatial Dynamics of Political Systems (3:3:0). Prereq grad stdg or Pol. Topics incl territoriality, reapportionment, spatial allocation of public facilities, perception of boundaries. Emphasis on the spatial impact of political process upon land use.

585 Quantitative Methods in Geography (3:3:0). Prereq a course in statistics or PoD. A survey of quantitative methods and their application to geographic research, incl statistical analysis of geographic data, correlation of geographic distributions, network analysis and spatial transformations.

590 Selected topics in Cartography and Geography (3:3:0). Prereq graduate standing or PoD. Designed to analyze topics of immediate interest. Content varies.

Graduate standing is prereq to all 600-level courses.

621 Human Ecology and the City (Same as SOCI 621) (3:3:0). Prereq grad stdg. Intro to urban ecology. Origin and development of various types of cities; shape and structure of urban areas; inner and outer city and spatial patterning of urban institutions.

650 Mapping Foundations (3:3:0). Prereq GEOG 310 or equiv or Pol. Discussion of the philosophical, perceptual, and technical foundations of cartography.

652 Computer Applications in Geography and Cartography (3:3:0). Prereq GEOG 310 or equiv and course in computer programming or Pol. Advanced treatment of computer generation of spatial imagery.

655 Map Design (3:3:0). Prereq GEOG 310 or equiv or Pol.
Health Education

Examination of user requirements, principles of graphic design and technical aspects of planning map production.

**656 Terrain Mapping (3:3:0)**. Prereq GEOG 310 or equiv or Pol. Advanced methods of relief and landform portrayal, slope, 3D terrain models and other forms of terrain representation.

**660 Geodetic Cartography (3:3:0)**. Prereq GEOG 310 or 413 or equiv and course in calculus or Pol. Intro to science of earth measurement, methods of establishing geodetic control for mapping and geodetic basis of map projections and coordinate systems.

**661 Map Projections and Coordinate Systems (3:3:0)**. Prereq GEOG 310 or equiv and course in calculus or Pol. Development of various map projections and coordinate systems; analysis of their properties, distortions and applications.

**670 Applied Climatology (3:3:0)**. Prereq course in weather and climate or Pol. Application of climatic concepts to natural and man-modified environments. Analysis of climatic change.

**671 Applied Geomorphology (3:3:0)**. Prereq course in climatology, geomorphology, or structural geology. In-depth examination of interaction among land forming processes, settlement and land-use patterns. Emphasis on planning and problem solving.


**680 Seminar in Geographic Thought and Methodology (3:3:0)**. Historical development of geographic thought and the current philosophy of geography. Analysis of the rationale for the discipline’s various subfields. Geographic research techniques and methods of analysis.

**684 Applied Economic Geography (3:3:0)**. Analysis of factors and patterns of location of economic activity, its theories, and regional systems. Emphasis on case studies.

**696 Directed Readings and Research (1-3:0:0)**. Prereq Po program director and Pol. Reading and Research on a specific topic, under the direction of a faculty member. Written report is req; oral exam and report may be req. May be repeated.

**785 Geographic Fieldwork (3:3:0)**. Prereq acceptance to degree status or PoD. Intro to the nature, scope, and objectives of geographic field methods and techniques, incl the use of base maps, acquisition of data, and field research design. The course will be taught, as much as possible, in field situations with the students required to develop and carry out relevant field research projects pertaining to both physical and cultural geography.

**795 Seminar in Regional Analysis (3:3:0)**. Analysis and synthesis of physical and cultural elements of geography in a selected region. Should be taken near the end of the master’s degree program and should provide an opportunity for the student to apply selective knowledge gained in previous systematic courses to a specific region.

**799 Thesis (3-6:0:0)**. Prereq degree candidacy and departmental approval of thesis proposal.

**Faculty**

Agne Traub, Charlene E., Ph.D., Texas Woman’s University, 1981; Assistant Professor

Bever, David L., Ph.D., Purdue University, 1978; Assistant Professor

Cooper, John H., P.E.D., Indiana University, 1955; Professor

Howze, Elizabeth, D.Sc., Johns Hopkins University, 1985; Assistant Research Professor

Metcalf, James A., Ph.D., University of Maryland, 1970; Associate Professor

Pruitt, B.E., Ed.D., North Texas State University, 1975; Adjunct Assistant Professor

**Health Education, M.Ed.**

The program leading to a master of education degree in Health Education is designed to serve teachers, community health agency personnel, and health promotion workers in business and industry.

**Admission Requirements**

In addition to fulfilling the Graduate School admission requirements, the applicant must hold a bachelor’s degree in health education or a related field and submit three letters of recommendation, transcripts of all college course work, and must have completed courses in biology, human anatomy, and physiology. Applicants who do not meet these requirements may be offered provisional or non-degree status in accordance with the general regulations of the Graduate School.

**Degree Requirements**

In addition to fulfilling the Graduate School degree requirements, the candidate must complete the following program:

- Core Courses
  - HEAL 511 History and Philosophy of Health Education (3)
  - HEAL 612 Scientific Foundations of Health and Fitness (3)
  - HEAL 513 Current Issues in Health Education (3)
  - HEAL 516 Program Development and Resources in Health Education (3)
  - HEAL 517 Health Education Process: School and Community (3)
  - HEAL 500 Workshop Courses (3-6)
Foundations and Research
Psychological Foundations–Education (3)
Research or Statistics (3)
Electives (3–6)
HEAL 798 Special Project or
HEAL 799 Thesis (3–6)
Successful Completion of Written Comprehensive
Examination

Total (36)

Graduate Assistantships

Administrative, research and teaching related
graduate assistantships are available in the health
education program. To be eligible for an
assistantship, a student must be admitted to degree
status and take a minimum of six semester hours of
graduate credit each semester.

Health Education Courses (HEAL)

500 Workshop in Health Education (1, 2, 3; 0:0). Analysis of
selected health problems and issues involving readings,
research, and group attention. Six sem hr of HEAL 500 may
be applied to degree cr.

511 History and Philosophy of Health Education (3; 3:0).
Focus on evaluation of significant historical events that
affected and contributed to health education development.
Emphasis on personalities, institutions, and philosophical
ideas of each area.

513 Current Issues in Health Education (3; 3:0). Analysis of
topical and often controversial health issues with emphasis
on selected problems of concern to society.

515 Community Health Education Planning and Delivery
(3; 3:0). In-depth study of the processes of planning,
organizing, delivering, and evaluating community health
education programs.

516 Program Development and Resources in Health
Education (3; 3:0). Prereq Baccalaureate degree in health
education or related field or PoC. Procedures used in
planning, development, and organization of health
education programs in school and health agency settings.

517 Health Education Process: School and Community
(3; 3:0). Prereq Baccalaureate degree in health education or
related field or PoC. Examination of the health education
process in a variety of health promotion, disease prevention,
and rehabilitative settings.

540 Advanced Driver and Traffic Safety Education (3; 3:0).
Prereq 3 hr basic course in driver education; course in
general safety education on college level; valid operator’s
license. Advanced course in driver education for teachers,
supervisors and administrators of driver education and
traffic safety programs.

599 Independent Study in Health Education (1–3; 0:0). Prereq
PoD. Study of a problem area in health education research,
theory or practice under direction of faculty. May be
repeated, but no more than three hr total cr may be given.

612 Scientific Foundations of Health and Fitness (3; 3:0). An
integrated study of human anatomy, physiology, chemistry,
and microbiology, presenting a complete picture of how the
body functions and the diseases and disorders that cause
the body to malfunction.

798 Project (3; 0:0). An individualized project applying
appropriate methodology to a health problem or issue.
Under supervision of graduate faculty member(s).

799 Thesis (3–6; 0:0). Exploration of a health problem using
appropriate research methodology under supervision of
graduate faculty member(s). Proposal must be approved
prior to enrollment for thesis credit.
History

Faculty

Cassara, Ernest, Ph.D., Boston University, 1957; Professor

Censer, Jack R., Ph.D., Johns Hopkins University, 1973; Associate Professor

Cohen, Martin B., Ph.D., The George Washington University, 1975; Assistant Professor

D'Amico, John F., Ph.D., University of Rochester, 1977; Assistant Professor

Deshmukh, Marion F., Ph.D., Columbia University, 1975; Associate Professor

Duara, Prasenjit, Ph.D., Harvard University, 1983; Assistant Professor

Gleissner, Richard A., Ph.D., University of Maryland, 1968; Associate Professor

Harsh, Joseph L., Ph.D., Rice University, 1970; Associate Professor

Hawkes, Robert T., Jr., Ph.D., University of Virginia, 1975; Assistant Professor

Henriques, Peter R., Ph.D., University of Virginia, 1971; Associate Professor

Hoberman, Louisa S., Ph.D., Columbia University, 1972; Assistant Professor

Holsinger, Donald C., Ph.D., Northwestern University, 1979; Assistant Professor

Jensen, Ronald J., Ph.D., Indiana University, 1971; Associate Professor

Lytton, Randolph H., Ph.D., Pennsylvania State University, 1973; Associate Professor

Pacheco, Josephine F., Ph.D., University of Chicago, 1950; Associate Professor

Pugh, Evelyn L., Ph.D., The American University, 1966; Professor

Rosenzweig, Roy A., Ph.D., Harvard University, 1978; Assistant Professor

Saeed, Mian M., Ph.D., University of London, 1965; Associate Professor

Soder, John P., Jr., Ph.D., Georgetown University, 1970; Associate Professor

Spence, Vernon G., Ph.D., University of Colorado, 1968; Professor

Walker, George E., Ph.D., Columbia University, 1975; Associate Professor

History, M.A.

This program is designed to help students achieve a greater understanding of the discipline of history and to master the methodology of the historian. The program is divided into four tracks and designed to serve:

1. Individuals who wish to continue their education at the master's level, students having a particular desire to do thesis work and students intending to pursue doctoral studies in history (see below, track 1).

2. Persons wishing to develop expertise in applied history or persons professionally employed as historians in business or government who desire to further their professional careers by earning an advanced degree in history (see below, track II).

3. Individuals who wish to develop master's-level skills in history, whether as a vocation or avocation or for reasons of intellectual self-fulfillment (see below, track III).

4. Teachers who want to extend their knowledge of current trends in historical thinking and improve their effectiveness in the classroom. Narrow specialization is avoided by allowing great latitude in choice of courses. Study in the methodology of teaching social studies is included in the programs (see below, track IV).

These tracks, designed to serve different interests, also possess several significant common features. For example, a student may specialize in American, modern European or Latin American history; a student may take three hours of credit in related disciplines; in the last semester of course work, a student and professor will design an individualized reading course to round the student's general historical knowledge.

Admission Requirements

An applicant for admission to the master of arts in history program must fulfill the admission
requirements of the Graduate School and the department of History, including the following:

1. scores in the GRE, including the area examination in history. Even for those who have had little or no history, the area exam is required for the purposes of evaluating deficiencies. This requirement, at the discretion of the department, may be waived when a baccalaureate degree is ten or more years old or when the applicant possesses another master's degree.
2. two letters of recommendation from professors of history with whom the applicant has studied, or from others directly familiar with the applicant's professional competence and interests.

Degree Requirements

Track I, Pre-Doctoral. This track is intended for students who desire the proper background for doctoral studies. To remedy possible deficiencies in a student's undergraduate study, up to 21 semester hours of foundation courses (HIST 550, 601-606, Themes in U.S., Latin America or Modern Europe) may be required. In addition, each candidate must successfully complete a minimum of 30 semester hours of graduate-level work with a GPA of not less than 3.00 as follows:

1. Three semester hours, HIST 610, The Study and Writing of History
2. Twelve semester hours in a major field of concentration (U.S., Latin American or Modern European history), including a research seminar and specialized readings
3. Nine semester hours in a second field of history. Minor fields same as above.

The candidate must also:

1. Demonstrate reading proficiency in a modern foreign language
2. Pass a written comprehensive exam
3. Complete a thesis (six semester hours).

Track II, Applied History. This track is designed for the student who desires to develop expertise in such applied history fields as: archival management, museum studies, historic preservation and editing. This degree would also be suitable for persons professionally employed as historians in business or government who desire to further their professional careers. To remedy possible deficiencies in a student's undergraduate study, up to 21 semester hours of foundation courses (HIST 550, 601-606, Themes in U.S., Latin America or Modern Europe) may be required. In addition, all candidates must successfully complete a minimum of thirty semester hours of graduate-level work with a GPA of not less than 3.00 as follows:

1. Three semester hours, HIST 610, The Study and Writing of History
2. Fifteen semester hours in a major field of concentration (U.S., Latin American or Modern European history), including a research seminar and specialized readings
3. Six semester hours, applied areas courses, e.g., museum studies, archives, historical editing
4. Six semester hours, internship
5. Pass a written comprehensive exam.

Students must also demonstrate a proficiency in the use of one relevant research tool, i.e., modern foreign language, computer language or statistics.

Track III, Enrichment. This track is intended for a student who wishes to study history for reasons of vocational, avocational or intellectual self-fulfillment. While a bachelor's degree is necessary to enter this program, it need not be in history. To remedy possible deficiencies in a student's undergraduate study, up to 21 semester hours of foundation courses (HIST 550, 601-606, Themes in U.S., Latin America or Modern Europe) may be required. In addition, all candidates must successfully complete a minimum of thirty semester hours of graduate-level work with a GPA of not less than 3.00 as follows:

1. Three semester hours, HIST 610, The Study and Writing of History
2. Fifteen semester hours in a major field of concentration (U.S., Latin American or Modern European history), including a research seminar and specialized readings
3. Twelve semester hours of electives
4. Six semester hours, HIST 799 (thesis) is optional. If a thesis is elected, then three hours in the major and three hours in electives will be assigned to it
5. Pass a written comprehensive exam. No relevant research tool is required.

Track IV. M.A. in History, with emphasis on teaching (formerly M.A. in Teaching History). In addition to
fulfilling the admission requirements of the Graduate School, applicants for this degree should have majored in history. Applicants with undergraduate majors in fields other than history may be admitted if their records demonstrate strong background in history and studies closely related to it. The department may require that undergraduate deficiencies be made up in courses (HIST 550, 601-606) without graduate credit. All candidates must successfully complete 36 semester hours of approved graduate-level course work with a grade-point average of not less than 3.00 as follows:

1. Twenty-four credits in history, including three credits in HIST 610. The Study and Writing of History (to be taken within the first nine hours of course work)

2. Twelve credits in education, including EDCI 567 and EDCI 783

3. No language requirement

4. A written comprehensive examination administered by the faculty. Candidates intending to teach at the secondary level must also qualify for the Virginia Collegiate Professional Certificate (or its equivalent) in history.

History Courses (HIST)

550 Interpretations of History (3:3:0). Study of development of historical writings in the West from ancient to modern times. Intro to historical methodology.

601 (611) Themes in United States History I (3:3:0). Survey of U.S. history prior to 1877. Designed for individuals entering the grad program, who need to strengthen their preparation in this area or who seek to enhance their knowledge of the latest interpretations in the field. Factual knowledge and its interpretation will be stressed. This course may not be taken by anyone who has satisfactorily completed HIST 611.

602 (612) Themes in United States History II (3:3:0). Survey of U.S. history since 1877. Designed for individuals entering the grad program, who need to strengthen their preparation in this area or who seek to enhance their knowledge of the latest interpretations in the field. Factual knowledge and its interpretation will be stressed. This course may not be taken by anyone who has satisfactorily completed HIST 612.

603 (621) Themes in Latin American History I (3:3:0). Survey of Latin American history from the pre-Columbian era through the wars for independence. Designed for individuals entering the grad prog who need to strengthen their preparation in this area or who seek to enhance their knowledge of the latest interpretations in the field. Factual knowledge and its interpretation will be stressed. This course may not be taken by anyone who has satisfactorily completed HIST 621.

604 (622) Themes in Latin American History II (3:3:0). Survey of Latin American history since the conclusion of the wars for independence in the early 1820s. Designed for individuals entering the grad prog who need to strengthen their preparation in this area and for those seeking to enhance their knowledge of the latest interpretations in the field. Factual knowledge and interpretation will be stressed. This course may not be taken by anyone who has satisfactorily completed HIST 622.

605 (631) Themes in European History I (3:3:0). Survey of European history from 1500 to 1815. Designed for individuals entering the grad prog who need to strengthen their preparation in this area or who seek to enhance their knowledge of the latest interpretations in the field. Factual knowledge and its interpretation are stressed. This course may not be taken by anyone who has satisfactorily completed HIST 631.

606 (632) Themes in European History II (3:3:0). Survey of European history from 1815 to present. Designed for individuals entering the grad prog who need to strengthen their preparation in this area or who seek to enhance their knowledge of the latest interpretations in the field. Factual knowledge and its interpretation are stressed. This course may not be taken by anyone who has satisfactorily completed HIST 632.

610 (700) The Study and Writing of History (3:3:0). Methodology of the historian, incl techniques of research, use of documentation and other sources, development of bibliography, synthesis of material. This course may not be taken by anyone who has satisfactorily completed HIST 700.

613 (701) The Colonial Origins of American Society (3:3:0). Study of evolution of elements in colonial society which affect contemporary American institutions and patterns of behavior. This course may not be taken by anyone who has satisfactorily completed HIST 701.

614 (703) The Enlightenment in America (3:3:0). Study of Enlightenment as it was reflected in various aspects of American life in the eighteenth and early nineteenth centuries. Impact of the Enlightenment on development of new American nation. This course may not be taken by anyone who has satisfactorily completed HIST 703.

615 (715) Problems in American History (3:3:0). Readings and discussion of bibliographies, interpretations and research trends in topics selected by instructor. Maximum of six hr may be earned.

616 (705) Attempts to Control the U.S. Westward Movement (3:3:0). Study of attempts by the East to control the West, how and by whom control was attempted, to what extent it was effective, to what extent the need for such control existed, and in what manner the West resisted Eastern domination. This course may not be taken by anyone who has satisfactorily completed HIST 705.

617 (713) Topics in the American Civil War Era (3:3:0). Joint project of instructor and students, into the various aspects of a common topic in the Civil War era with emphasis on historiography and historical method. This course may not be taken by anyone who has satisfactorily completed HIST 713.

623 (717) Topics in Recent U.S. History, 1945 to Present
(3:3:0). Political, social, economic and cultural forces which shaped the post-World War II American experience. Consideration of interaction between foreign affairs and domestic politics and institutions and alternative interpretations. This course may not be taken by anyone who has satisfactorily completed HIST 717.

624 (707) Interpretations in United States Diplomatic History (3:3:0). Diplomatic problems and interpretations of changes in U.S. development as a world power. Analysis of administration of American foreign policy and its relationship to national interests. This course may not be taken by anyone who has satisfactorily completed HIST 707.

625 (710) Race in American Life and Thought (3:3:0). Historical examination and impact of nature of American attitudes toward nonwhites. Emphasis on origins and effects of American views of race on our national experience. This course may not be taken by anyone who has satisfactorily completed HIST 710.

626 (709) Seminar in State and Local History (3:3:0). Prereq HIST 610 or PoD. Exposition of principles and techniques of local history followed by intensive investigation of selected aspects of the region utilizing area manuscript collections. This course may not be taken by anyone who has satisfactorily completed HIST 709.

635 (735) Problems in European History (3:3:0). Investigation of selected problems in the history of Europe. Readings, discussions, development of bibliographies. Where possible, primary sources are utilized. Maximum of six hr may be earned.

636 Political Culture in Twentieth-Century Germany and Austria: Continuities and Discontinuities (3:3:0). Recent interpretations of key political events of the twentieth century. The focus will be on the question: Despite radical political changes, were there fundamental continuities in the structure of German and Austrian society that can be observed throughout the period under review?

637 (737) Great Britain: Empire to Commonwealth, 1870-1970 (3:3:0). Examination of the rise of the "new imperialism" in Great Britain from 1870 to end of the empire and gradual formation of the Commonwealth of Nations. This course may not be taken by anyone who has satisfactorily completed HIST 737.

639 Society and Politics in Western Europe, 1750-1914 (3:3:0). Focus on changes in social conditions and their ramifications in political life. Attention to urbanization of workers, changes in the peasantry, growth of middle classes, decline of nobility, as well as major political developments and expansion of liberal reforms. This course may not be taken by anyone who has satisfactorily completed HIST 739.

645 (745) The Russian Revolution and the Origins of the Soviet State (3:3:0). The period between 1890 and 1924 with concentration of the sources of Bolshevism, problems of the old regime as they led up to the revolutions of 1905 and 1917, establishment of the new regime and its survival in an environment of foreign and civil war. This course may not be taken by anyone who has satisfactorily completed HIST 745.

655 (755) Problems in Asian History (3:3:0). Subjects announced by instructor. Discussion of readings and historical interpretations and compilation of a comprehensive bibliography on given theme. Maximum of six hr may be earned.

670 (720) Social Revolution in Latin America (3:3:0). Analysis of revolutionary forces that are challenging traditional institutions and transforming all aspects of society in contemporary Latin America. Selected countries are studied in depth. This course may not be taken by anyone who has satisfactorily completed HIST 720.

675 (725) Problems in Latin American History (3:3:0). Analysis of selected problems in Latin American history. Emphasis on reading and discussion of historical interpretations and development of bibliography. Maximum of six hr may be earned.

678 (728) Latin American Cultural and Intellectual History, Nineteenth Century (3:3:0). Iberian background and other foreign influences; ideas of independence leaders; midcentury Romanticism, Liberalism, and Traditionalism; secular and religious Positivism; and Marxian socialism. Intellectual developments traced in major Latin American thinkers, writers, and artists. This course may not be taken by anyone who has satisfactorily completed HIST 728.

679 (719) Seminar on Inter-American Diplomacy (3:3:0). Prereq HIST 610 or PoD. Seminar on geographic, political, economic, military, and other forces that have influenced inter-American relations. Study of the special relationship between U.S. and Latin America. May be applied toward the major or minor concentration in either U.S. or Latin American history. This course may not be taken by anyone who has satisfactorily completed HIST 719.

683 The Cultural History of the Islamic World (3:3:0). Government, science, philosophy, religion, literature, arts and architecture of the Arabs of the Umayyad and Abbasid period, Persians of the Safavid Period, Gaznavids of Afghanistan, grand Mughals of India and Pakistan, Timurids of Central Asia, Fatamids of Egypt, Moors of Spain, and the Turks. Important political and cultural movements in different parts of Islamic World are discussed. This course may not be taken by anyone who has satisfactorily completed HIST 783.

690 The Administration of Archives and Manuscripts (3:3:0). Prereq 6 hr of U.S. history or PoD. An intro to the principles and practices in the management of records and the administration of archival and manuscript collections, public and private. Designed for graduate students with a special interest in historical sources as well as for those specializing in applied history.

691 Museum Studies (3:3:0). Prereq 6 hr of U.S. history or PoD. General intro to museums of history and museum studies in the United States, intended for the interested citizen as well as for assistance to students in course and career choices. Course explores the development, present state, and future possibilities of museums in the United States, with some reference to international developments.

692 Historical Editing (3:3:0). Intro to the fundamentals of historical editing of documents, including the use of microform, word processing, and computer techniques. Designed for persons seeking an intro to various areas of

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applied history and for persons intending to edit historical documents for publication.

693 Historic Preservation (3:3:0). Prereq 6 hr of U.S. history or PoD. General intro to historic preservation in the United States, intended for the interested citizen as well as for assistance to students in course and career choices. Course explores the development, present state, and future possibilities of historic preservation in the United States, with some reference to international aspects of preservation.

694 Law, Society and Historical Resources (3:3:0). Prereq 6 hr in field of major historical concentration and 3 hr in applied studies field of concentration or PoD. General introduction to the processes by which cultural heritage programs are planned, funded, and carried out, and the dynamics of working in and with these processes. Particular attention will be given to program organization for management and funding; legal techniques for creating and using interests in real and personal property, including literary, artistic and intellectual property; liability for damage and injuries; and strategies for public and private sector support of programs.

695 (795) History Symposium (3:3:0). Subject of academic and community interest pursued through discussions and lectures by distinguished guest instructors.

711 Research Seminar in United States History (3:3:0). Prereq HIST 610 or PoD. Research in specialized topics using primary sources. Maximum of six hr may be earned.

731 Research Seminar in European History (3:3:0). Prereq HIST 610 or PoD. Research in specialized topics using primary sources. Maximum of six hr may be earned.

771 (721) Research Seminar in Latin American History (3:3:0). Prereq HIST 610 or PoD. Research in specialized topics using primary sources. Maximum of six hr may be earned.

790 Specialized Readings in United States History (3:3:0). (To be taken in the final sem of the program.) Designed to integrate the students' past work in the major field and to fill gaps in this area prior to comprehensive exam. After review of grad experience, student and instructor design a reading list to round out preparation for the exam.

791 Specialized Readings in Latin American History (3:3:0). (To be taken in the final sem of the program.) Designed to integrate the students' past work in the major field and to fill gaps in this area prior to comprehensive exam. After review of grad experience, student and instructor design a reading list to round out preparation for the exam.

792 Specialized Readings in European History Since 1500 (3:3:0). (To be taken in the final sem of the program.) Designed to integrate the students' past work in the major field and to fill gaps in this area prior to comprehensive exam. After review of grad experience, student and instructor design a reading list to round out preparation for the exam.

794 Internship in Applied History (3-6:0:0). Prereq 3 hr of applied history in appropriate area and 12 hr in major field or Permission of internship director. All internship placements must be approved by the department to ensure their suitability to the student's program. An introduction to applied history through work and study at a historical museum, site, library archive, editing project, or other approved agency.

796 Directed Readings (3-6:0:0). Independent reading on a topic agreed to by student and faculty member. Maximum of six hr may be earned.

799 Thesis (6:0:0).

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in history. Program of studies designed by student's discipline director and approved by student's doctoral committee which brings the student to participate in research of discipline director and results in a paper reporting the original contributions of the student. Paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.
Information Technology

Faculty

See Computer and Electronics Engineering, Computer and Information Sciences, and Systems Engineering Faculty.

Information Technology, Ph.D.

The purpose of Information Technology is system design for human interaction through more efficient and effective organization and use of knowledge. Information technology provides a conceptual basis for the integration of traditional engineering problem solving, with the analysis capability of systems engineering and operations research through acquisition, representation, and use of information made possible by contemporary computer science and electronics engineering.

The disciplines of Computer and Electronics Engineering and Computer and Information Sciences involve the hardware and software aspects of information technology, and concern the design of communication, control, and computer systems that can send large volumes of data at high speeds, transmit facsimiles of engineering designs, automate manufacturing facilities and office environments, and provide the appropriate data bases and the physical displays of knowledge for a variety of problem-solving activities.

But hardware alone, even combined with software, cannot provide a complete basis for contemporary education and research in information technology. The human element is also important for successful system design and operation and is a critical ingredient in a successful information technology program. Systems Engineering is primarily concerned with working with people to assist them in the organization of knowledge. This requires methods for knowledge acquisition and representation, as well as utilization.

Our doctoral efforts in information technology concern three disciplines: Computer and Electronics Engineering, Computer and Information Sciences, and Systems Engineering. These efforts vary from requirements definition or specification to the conceptual and functional design and development of systems. They cover such topics as architectural definition and performance evaluation, activities that are necessary to obtain functional integration, maintainability, reliability, and the appropriate interfaces to ensure systems design for successful human interaction.

Mathematics is one of the fundamental methods for communication of ideas in information technology. Cognitive psychology studies ways in which humans process information. Information technology professionals are necessarily concerned with both of these areas. Professionals in business and public administration and management may benefit from information systems and information technology. There are, accordingly, many opportunities for interaction with other graduate efforts at GMU, which are strongly encouraged.

Students may avail themselves of course opportunities through the Cooperative Graduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree program. Refer to section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Admission Requirements

The Ph.D. program in Information Technology requires commitment to several years of dedicated study and research necessary to develop the requisite knowledge and capability at the doctoral level. Students are selected on the basis of scholarship and potential from applicants with appropriate degrees from institutions of high standing. An undergraduate grade average of B and Graduate Record Examination aggregate aptitude scores of 1,200 are desirable minimum requirements for the program. The admissions process includes submission and evaluation of transcripts from previous colleges and universities attended, three letters of reference, and a resume with a detailed statement of career goals and aspirations. All of an applicant's background is examined prior to making an admissions decision.

Knowledge of mathematical sciences and computers gained by study, experience, and practice is applied in Information Technology to develop ways to acquire, represent, and use knowledge effectively. Some professionals in information technology will concentrate on the design of data base management software. Others will utilize methods of applied probability and statistics in devising better computer simulation models, or in developing time series algorithms for processing information from earth satellites. Still others will be involved in system acquisition and procurement management. The basis for all study in each of these areas is a sound background in mathematics and computers. To ensure this basic common ground in fundamentals, students should have a background in topics such as
calculus, linear algebra, probability, and statistics generally equivalent to that obtained in the GMU undergraduate courses MATH 213, 303, 351, and 352. They should also have a sound working knowledge of at least one high-level programming language, preferably Pascal or Fortran. Otherwise highly qualified students who present deficiencies in these requirements may be able to remedy them after conditional admission to the program by taking appropriate undergraduate courses in these subjects.

Degree Requirements

The background needed for successful doctoral study involves more than this minimum of mathematics and computers, however, an appropriate background in these subjects is especially important. A Doctoral Readiness Examination containing questions from these basic areas will be given at the beginning of study for the Ph.D. in Information Technology to provide counseling information concerning this requirement.

Upon admission to the program, a student is assigned a temporary adviser. It is the student's responsibility to work with the adviser to enable an advisory committee for the student to be appointed by the Dean of the Graduate School soon after admission. This is especially important for students who have completed a considerable amount of graduate work elsewhere.

The major initial task for a student's doctoral advisory committee is to work with the student to define an acceptable plan of study. A minimum of four faculty members will be on each student's advisory committee, with at least two information technology departments represented on the committee.

Required Course Work

The doctoral program in Information Technology involves taking a set of appropriate courses as prescribed by the plan of study, preparing a doctoral research proposal, and accomplishing a significant research effort prior to preparation of a doctoral dissertation that describes these contributions.

Course requirements for the doctoral degree must satisfy a breadth requirement, as well as a specialty requirement. The Comprehensive Examination, generally taken when the student has completed all courses in the study plan, will test satisfaction of each of these requirements.

The breadth requirement portion of the comprehensive examination is intended to ensure that Information Technology doctoral students are well prepared in the six core areas of information technology at GMU: systems methodology and design, operations research, control communications and signal processing, computer operating systems and architecture, data structures and large-scale networks, and analysis of algorithms. The first two of these areas are focal points for study in systems engineering, the second two for study in computer and electronics engineering, and the latter two are core requirements for computer and information sciences. Students are expected to be familiar, at a basic level, with introductory graduate work in these areas.

The depth or specialization requirement associated with the comprehensive examination will be tailored to the specific interest areas of the student and will consist of one or two examinations in as many areas of advanced specialty interests, as determined by the advisory committee and the doctoral student. Each examination will be based on an area of interest to the student as described by the student in a memo written to the advisory committee. Each memo will describe an advanced specialty area and will briefly comment upon the courses taken in the area and the supervised independent study that has been accomplished to bring the student up to the “state of affairs” in that area. This memo serves simultaneously to define and constrain the coverage for the advanced portion of the comprehensive examination.

The general objective of the advanced portion of the comprehensive examination is to enable the advisory committee to assess a student's ability and readiness for doctoral research in an area of student specialization. The doctoral study plan becomes an integral part in overall program planning for a doctoral student. It is in this study plan that a “learning contract” for the student is obtained. A total of not less than 48 semester hours of appropriate graduate-level course work, including courses taken for the master's degree, will be included in the study plan. The plan will also indicate participation in seminars and registration for not less than 24 semester hours of doctoral research.

After satisfactory completion of the two or three advanced written portions of the comprehensive examination, the student will arrange for the scheduling of the oral portion. The entire advisory committee will then meet with the student for
approximately two hours, at which time he or she will be questioned concerning basic and advanced areas of study. The student will pass or fail the comprehensive examination depending on the results of this examination. After a student has successfully passed the comprehensive examination, application may be made to become a “candidate” for the Ph.D. degree in Information Technology.

Next, the student prepares, under the guidance of the advisory committee and dissertation director, a proposal for the doctoral research in Information Technology. The student will present this proposal to the advisory committee in a public presentation.

With the advisory committee’s concurrence that the dissertation proposal describes a promising area of endeavor, the student proceeds with the doctoral research. When the central portions of the research have been completed so that the student is able to describe the original contributions of the dissertation effort, the final oral presentation of the dissertation research may be scheduled. This will be a critical public examination to which the entire academic and research community is invited. The purpose of the examination and presentation is to evaluate the extent of the contribution and steering with respect to desirable revisions and extensions. Following a satisfactory evaluation by the advisory committee of the oral defense of dissertation, it is the student’s duty to prepare, with supervision from the dissertation director, the final publishable dissertation that represents a definitive contribution to knowledge in Information Technology. The major purpose of oral defense of the dissertation is to enable the advisory committee to provide the student and the director of the doctoral dissertation with suggestions concerning completion of the research effort and preparation of the final doctoral dissertation.

**Information Technology Courses (INFT)**

Graduate courses listed under the Departments of Computer and Electronics Engineering, Computer and Information Sciences, and Systems Engineering are also courses in information technology.

**796 Directed Reading and Research** (1–3). Reading and research on a specific topic in information technology under the direction of a faculty member. May be repeated as needed.

**800 Doctoral Seminar in Information Technology** (1). A weekly seminar in information technology with interactive participation by students, faculty, and invited specialists. May be repeated as needed.

**803 Doctoral Tutorial in Information Technology** (3). Individualized intensive study of particular aspects of information technology. May be repeated as needed.

**999 Doctoral Dissertation** (1–12). Formal record of commitment to doctoral dissertation research under the direction of a faculty member in information technology. May be repeated as needed.
Interdisciplinary Studies

Faculty

Denys, Martin J., Philosophy and Religion, Coordinator, Liberal Studies

Fonseca, James W., Division of Continuing Education, Director of Individualized Study Degree Programs.

Interdisciplinary Studies, M.A.I.S.

The master of arts in interdisciplinary studies (M.A.I.S.) differs from traditional graduate programs by offering individual study which emphasizes the integration of knowledge from various disciplines. With the help of an adviser, students in the program design a course of study which is tailored to their particular interests and needs.

The M.A.I.S. is divided into two tracks, Liberal Studies and Individualized Studies. The Liberal Studies (LS) track offers a broad course of study for those who wish to explore the fundamental ideas of Western culture within the context of contemporary society. In addition to appealing to students who wish to broaden the humanistic dimension of their knowledge, this track is also of value to business and professional people who feel the need for liberal studies in order to cope with the complex issues posed by modern society. Teachers, librarians, and other professionals often find that this program offers a useful alternative to graduate work in a single discipline. For the student with less specific goals, the program may be more satisfying than participating in a series of unrelated courses. A student in the LS track chooses one broad area of concentration from four interdisciplinary topics: (1) technology and culture; (2) the secular and the sacred; (3) the arts and society; and (4) personal, social, and political values. Within the student’s area of concentration, he/she pursues individually designed courses of study.

The Individualized Study (IS) track is designed for students who have specific professional or career interests in interdisciplinary areas which are not served by traditional graduate programs. Students in this track may combine courses from various disciplines which are appropriate to their particular career needs. Since the IS track is for the professionally oriented students, applicants must demonstrate their career interests by prior work and educational experience in their proposed area of concentration. Under the guidance of a faculty adviser, students entering the program develop an area of concentration which is tailored to their particular interests. A major part of the IS program is the completion of a project which integrates knowledge gained from courses within the student’s area of concentration. Students in the IS track may earn credit for prior experiential learning related to their field of concentration.

Liberal Studies Track, M.A.I.S.

The LS track of the M.A.I.S. offers a broad, interdisciplinary course of study that elucidates the fundamental ideas and values of Western culture and seeks to interpret these ideas and values within the context of contemporary society. This track is directed primarily toward employed adults possessing at least a baccalaureate degree, who wish to broaden the humanistic dimensions of their knowledge in an integrated and disciplined course of study.

Admission Requirements. In addition to fulfilling the admission requirements of the Graduate School, an applicant to the LS track is expected to provide three letters of recommendation and a written statement of 750–1000 words detailing the reasons for choosing this degree program rather than a more traditional one. Care should be given to the preparation of the statement. The applicant should cover the following issues in the statement: (a) in terms of your goals and objectives, why the LS track of the M.A.I.S. is more appropriate than a traditional masters program; (b) in view of the four concentrations listed above, define the interests you wish to pursue within this degree; (c) how you see this degree relating to your previous education and life experience.

Degree Requirements. The program is designed to provide students with a common framework for examining and understanding the origins, historical development and contemporary impact of ideas and values that are characteristic of Western culture and an opportunity for individually designed courses of study leading to in-depth analysis of particular issues or problems of Western culture in contemporary society. The key factors in this design are core seminars, an interdisciplinary concentration in an approved topical area, supporting course work, and a master’s thesis. Credit hours required for graduation total 36, including 6 hours in core seminars, and at least 30 hours in course work at the 500-level or above, including the master’s thesis. A
student must complete all requirements for the degree within six years of matriculation.

Core Seminars. Seminar I. An entering student is required to take an introductory three-hour graduate seminar during the first nine hours of the program. This seminar introduces the student to the study of human culture, as well as to the unique features of Western culture—its origins and continuing historical development.

Seminar II. This seminar is designed to be the last course which the student takes before commencing work on a thesis. Through the vehicle of a problem or theme chosen by the professor, the student will again turn to the question of culture. In this case, however, the student will apply the knowledge gained from the introductory seminar, as well as from courses completed, particularly those in the area of concentration.

Interdisciplinary Concentration. With the assistance of an adviser, a student will choose interdisciplinary project and area of study from among the following general topics:
1. Technology and culture
2. The secular and sacred
3. The arts and society
4. Personal, social, and political values

Since each of these topics can be studied successfully from the perspective of several of the traditional academic disciplines (humanities, social sciences, etc.), the students will be expected to choose courses from supporting departments in order to complete their fields of study.

Course Work and Master's Thesis. Courses relating to the student's area of study may be selected, with approval of the student's adviser, from among the graduate offerings of the departments in the College of Arts and Sciences. Courses from other areas may also be selected if they contribute to an understanding of the student's project. At least six of the courses presented for the degree must be in the student's area of concentration.

The thesis is planned as the last major activity in the student's course of study in the chosen area of concentration. The thesis will be an interdisciplinary study of a significant problem identified by the student, and approved by the adviser, arising out of the student's course work and research within the chosen area of concentration.

Liberal Studies 510: The Phenomenon of Culture (3:3:0). Prerequisites: Graduate standing and/or permission of the instructor. Description: An examination of various concepts of culture (e.g., anthropological, sociological, philosophical), with a view toward arriving at a concept of culture that allows us to account for the differences between cultures as well as the diversity that occurs within a culture. Using this understanding, we will explore the unique features of Western culture, paying particular attention to a single idea, e.g., the idea of evolution, and the ways in which it reflects and has influenced the values and ideals of the West.

Individualized Studies Track, M.A.I.S.

The Individualized Studies (IS) track of the master of arts in interdisciplinary studies degree is a program designed for adult students who desire to continue their graduate education in nontraditional areas of study. Nontraditional areas of study are those in which degree programs are not offered.

Admission Requirements. Application to the program is completed when a student has obtained counseling through the IS office, applied to the Graduate School and submitted appropriate transcripts and three letters of reference, and submitted the application to the IS Program at George Mason University.

Degree Requirements. This IS track is a professionally oriented master's program. Some experience in the area of proposed study concentration must be demonstrated prior to acceptance in the program. A provision for credit for experiential learning may be included for the student who successfully demonstrates advanced learning in the field of study to a panel of full-time faculty members. Credit is available for graduate-level course work taken in formal education settings at nonuniversity institutions (provided that such course work has been evaluated appropriately by the American Council on Education.)

The Individualized Study (IS) track also requires that the student have demonstrated a commitment to graduate education by completing at least six hours of graduate-level work related to the proposed concentration prior to admission to the program. The student who has not yet completed six hours of course work may be admitted to provisional status.
The proposed course of study must be designed in conjunction with, and approved by, a full-time member of the George Mason University faculty. A three-credit individualized study project is required; or with approval of the faculty adviser and the chair of the adviser's department, a six-credit IS thesis may substitute for the IS project.

Human Resource Management Program. This master's level program is designed for prospective HRM professionals, experienced individuals who wish to make a career change, and for those currently employed in HRM fields who wish to obtain a degree or acquire new skills and knowledge. The 36-semester hour curriculum leading to the M.A.I.S. degree is designed to integrate knowledge from six academic disciplines to satisfy core and specialty requirements for those with specific career interests in training, management, organizational development, labor relations and personnel. The focus of the program is on acquiring relevant knowledge while concurrently acquiring the skills to implement the learning.

Individuals who wish to obtain further information about the program may contact Dr. Jack Levy, Department of Education, or Dr. James Fonseca, Division of Continuing Education.

Transfer Credit Provisions of IS Track. The Individualized Studies (IS) track allows acceptance of up to 12 hours of transfer credit, provided that each course has a minimum grade of B and provided concentration. In all cases a minimum of 18 hours of course work at George Mason University must be completed with a minimum grade of B (excluding credit for experiential learning and IS project or thesis credits). In total, a minimum of 36 hours towards the M.A.I.S. degree must completed. No more than 12 hours of course work in a single discipline may be taken at George Mason University and offered toward the 36-hour requirement in the IS Track. The extent to which transfer credit and credit earned at George Mason University in the same discipline may be offered toward the degree will be determined on an individual basis.

Course Work

Individualized Studies 798 Project (3:3:0).
Prerequisite: Degree candidacy in Individualized Studies Track, M.A.I.S., completion of 27 semester hours of graduate course work, approval of faculty adviser, and approval of Director, Individualized Study Degree Programs. Catalog Descriptions: Research project related to the student's individualized concentration taken under supervision of the faculty adviser.
Mathematics

Faculty

Draper, Richard N., Ph.D., Johns Hopkins University, 1966; Professor

Fischer, Klaus G., Ph.D., Northwestern University, 1973; Associate Professor

Gabel, Michael R., Ph.D., Brandeis University, 1972; Associate Professor

Kiley, W. Thomas, Ph.D., Brown University, 1969; Associate Professor

Lawrence, James F., Ph.D., University of Washington, 1975; Assistant Professor

Levy, Ronald F., Ph.D., Washington University, 1974; Associate Professor

Lin, Tech-Cheong, Ph.D., Dalhousie University, 1974; Assistant Professor

Lin, Jeng-Eng, Ph.D., Brown University, 1976; Assistant Professor

Rice, Michael D., Ph.D., Wesleyan University, 1973; Associate Professor

Saperstone, Stephen H., Ph.D., University of Maryland, 1970; Professor

Shapiro, Jay A., Ph.D., Rutgers University, 1975; Assistant Professor

Smith, John A., Ph.D., University of Maryland, 1970; Professor

Svendsen, Edward C., Ph.D., University of Illinois, 1968; Assistant Professor

Admission Requirements

In addition to fulfilling the Graduate School admission requirements applicants must have:

1. Three letters of recommendation

2. Extensive undergraduate training in mathematics that includes courses similar to MATH 315, 316: Advanced Calculus, MATH 322: Linear Algebra. MATH 611 and 612: Intermediate Analysis and Algebra present some of the highlights of these prerequisite courses and sharpen the skills necessary to enable a student to enter the degree program

3. GRE exams are recommended but not required.

Degree Requirements

In addition to fulfilling the Graduate School degree requirements the candidate must:

1. Complete no less than 30 semester hours of graduate work approved by the department. These include courses listed under MATH, OR, and STAT. Up to six hours may be chosen from certain mathematically-related courses in other departments, with approval from the Mathematical Sciences Department. Note that OR and STAT courses are offered by the Department of Systems Engineering.

2. Complete MATH 675 and 676: Real Analysis, by the end of the second full year of the program

3. Complete a research component of the degree: Thesis 799/Seminar 795-796. This component must be at least three hours and may not exceed nine hours. No more than 6 hours of either thesis or seminar can be applied toward the 30-hour minimum requirement for the degree

4. Pass the departmental examination. This oral exam is to be taken near the completion of the degree and tests the cumulative skills acquired by the student. The exam consists of a basic and advanced unit in each of the areas of pure mathematics, operations research and statistics. A student must pass two units, one basic and one advanced. The two units are chosen by the student in consultation with the graduate coordinator.

Specialization in Operations Research

This specialization allows students to concentrate their studies on mathematical models and methods
that are used to analyze complex real-world decision problems in both the private and public sectors.

The following requirements apply to this specialization:

1. In addition to satisfying the general degree requirements of the department, students must complete a minimum of four courses prefixed by OR. Three of these must be at the 600 level or higher. Students must complete OR 541 and 542: Operations Research I and II.

2. The departmental examination must consist of the basic unit in operations research and the advanced unit in any area.

Specialization in Statistics

This specialization allows students to concentrate their studies in the theory and practice of the methods and techniques of statistical analysis. The following requirements apply to this specialization:

1. In addition to satisfying the general degree requirements of the department, the student must complete MATH 651: Probability and STAT 752: Mathematical Statistics.

2. The student must complete three of the following courses:
   - STAT 653 Survey Sampling
   - STAT 654 Applied Statistics
   - STAT 655 Analysis of Variance
   - STAT 656 Regression Analysis
   - STAT 657 Nonparametric Statistics
   - STAT 659 Topics in Statistics

3. The department examination must consist of the basic unit in the area of statistics and an advanced unit in any area.

Course Work

The department offers courses in pure and applied mathematics, including Real and Complex Analysis, Algebra, Topology, Geometry, and Differential Equations. These include all courses prefixed by MATH. A complete list appears below. Courses prefixed by OR and STAT are offered by and listed with the department of Systems Engineering.

Mathematical Sciences Courses (MATH)

A double number separated by a comma (MATH 771, 772) indicates that both grad courses normally constitute a sequence and that the first semester is prereq to the second. The prereq may be waived by PoC. See also STAT and OR courses.

611 Intermediate Analysis (3:3:0). Development of the number system, review of the highlights of calculus, sequences and series of functions. Cr not applicable toward the 30 cr req for the M.S. in mathematics but can be counted toward the Master of Education.

612 Intermediate Algebra (3:3:0). Linear algebra, vector spaces, linear independence, linear transformations, and matrix operations. Cr not applicable toward the 30 cr req for the M.S. in mathematics but can be counted toward the Master of Education.

620 Applied Matrix Analysis (3:3:0). Prereq MATH 612, 303 or 322. Review of vector and matrix arithmetic, Gaussian elimination, Linear Programming, eigenvalues, the Jordan form, linear differential systems, positive definite matrices, Markov processes, game theory, applications to numerical analysis, optimization, economic and ecological systems. Emphasis on modeling using matrix algebra to give full view to its applicability.

621, 722 Algebra (3:3:0), (3:3:0). Groups, rings, fields, category theory, Galois theory.

629 Topics in Algebra (3:3:0). Prereq Pol. Special topics in pure or applied algebra not covered in the regular algebra sequence. May be repeated for cr.


637, 638 Non-Euclidean Geometry (3:3:0), (3:3:0). Prereq Pol. Affine, projective, hyperbolic, elliptical, differential geometry; transformations and elementary combinatorics.

639 Topics in Topology and Geometry (3:3:0). Prereq Pol. Special topics in topology and geometry not covered in the regular topology and geometry sequence. May be repeated for cr.

651 Probability Theory (3:3:0). Axioms for a probability space, conditional probability, random variables, distribution functions, moments, characteristic functions, modes of convergence, limit theorems.

675, 676 Analysis I, II (3:3:0), (3:3:0). Real and complex number systems, topology of euclidean space, continuity and differentiability of functions, Riemann-Stieltjes integration, modes of convergence of sequences of functions, power series, complex analytic functions, Cauchy's theorem, contour integration, normed linear spaces, contraction mapping theorem, Baire category theorem, Arzela-Ascoli theorem, differentiable mappings in euclidean space, inverse and implicit function theorems, Lebesgue integration, dominated convergence theorem, measurable sets, and functions.
Degree Programs

677, 778 Ordinary Differential Equations (3:3:0), (3:3:0).

679 Topics in Analysis (3:3:0). Prereq Pol. Special topics in analysis not covered in the regular analysis sequence. May be repeated for cr.

681, 682 Systems Optimization and Control (3:3:0), (3:3:0).
Prereq MATH 651 or equiv and MATH 675 or Pol. Systems of linear differential equations, optimization of linear dynamical systems, controllability and optimal control of linear systems, Gauss-Markov Processes, Kalman filtering. Applications to networks, aerospace, information processing.

689 Topics in Applied Mathematics (3:3:0). Prereq Pol. Special topics in applied math not covered in the regular applied math sequence. May be repeated for cr.

733 Homotopy Theory (3:3:0). Homotopy theory incl the fundamental group, higher groups, and exact sequences.

734 Homology Theory (3:3:0). Homology theory incl simplicial homology theory, exact sequences, fixed-point theorems.

752 Mathematical Statistics (3:3:0). Prereq MATH 651.
Sampling distributions, point and interval estimation (Cramer–Rao theorem), testing of hypotheses (Neyman–Pearson tests, uniformly most powerful tests, sequential tests), linear models, distribution free methods.

771, 772 Complex Analysis (3:3:0), (3:3:0).

795, 796 Seminar (3:3:0), (3:3:0).

799 Thesis (1-6:0:0). Original or compulsory work to be evaluated by a committee of three faculty members.

800 Studies for the Doctor of Arts in Education (var cr).
Prereq D.A.Ed. admission to study in mathematics. Program of studies designed by student’s discipline director and approved by student’s doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

Music

Faculty

Brawley, Thomas M., Ph.D., Northwestern University, 1975; Associate Professor

Burton, Stephen D., M.M., Peabody Conservatory of Music, 1974; Professor

di Bonaventura, Sam, D.M.A., Peabody Conservatory of Music, 1964; Professor

Harrison, Judith L., Ed.D., University of North Carolina at Greensboro, 1980; Assistant Professor

Hill, Thomas H., D.M.A., The Catholic University of America, 1970; Associate Professor

Kanyan, Joseph M., D.M.A., The Catholic University of America, 1972; Associate Professor

Smith, Glenn E., D.Mus., Indiana University, 1973; Associate Professor

Smith, James G., D.M.A., University of Illinois, 1973; Professor

Music, M.A.

The expansion of professional education in the arts is paramount for the growth and development of a rich and vital cultural community and a supporting network of individual artists. The dynamics of contemporary society suggest that the impact of the arts on public life will continue to expand well into the twenty-first century. Each year, despite the sagging economic situation, there are increased opportunities for creative work by performers, composers, sculptors, painters, dancers, actors, historians, theoreticians, and musicologists.

The master of arts with specialization in music has been developed by the Department of Performing Arts as one of those educational channels of opportunity to meet the intellectual and career needs of qualified students. It is a comprehensive and advanced program of study with a choice of concentrations in performance, music education, composition, conducting, and accompanying.

Admission Requirements

In addition to fulfilling the admission requirements of the Graduate School, the applicant is expected to hold a baccalaureate degree in music. Before admission to degree status, students must submit

http://catalog.gmu.edu
acceptable scores on the Graduate Record Examination and the GRE Advanced Test in Music.

The following concentration admission requirements must also be met:
Performance: Audition
Music Education: Certification to teach music in the public schools
Composition: Submission of a portfolio of compositions and an interview with a faculty committee
Conducting: Audition
Accompanying: Audition

Degree Requirements

A student must successfully complete 30 hours of credit in graduate music courses. With the approval of the department, three hours of nonmusic graduate credit may be taken.

The student must satisfy the following requirements:

General Requirements (11 credits):
Introduction to Research in Music (3)
Analytical Techniques (3)
History and Literature of Music (3)
Ensemble (2)

Additional requirements for the concentration in Performance (19 credits):
Graduate Private Music Instruction—Instrumental/Vocal (9)
History and Literature of Music (3)
Graduate Recital (1)
Electives (6)

Additional requirements for the concentration in Composition (19 credits):
Psychology of Music Teaching and Learning (3)
Aesthetics of Music Education (3)
Thesis or Project (6)
Electives (7)

Before receiving the degree, students in this concentration must complete the equivalent of one year of full-time public/private school—music teaching. Before beginning the thesis or project, students must pass a comprehensive examination in music education.

Additional requirements for the concentration in Accompanying (19 credits):
Graduate Private Music Instruction—Accompanying (9)
History and Literature of Music (3)
Graduate Recital (Vocal Accompanying) (1)
Graduate Recital (Instrumental Accompanying or Chamber Music) (1)
Electives (4)

The entering graduate student in this concentration must show evidence of having completed one semester of study (or its equivalent) in each of the following foreign languages: French, German, Italian. Deficiencies in this area can be remedied by completing one semester of undergraduate study for each of the languages not previously studied. The recommended music history and literature courses are in the vocal, operatic, or chamber music areas.

Music Courses (MUSI)

511 Analytical Techniques (3:3:0). Prereq Baccalaureate degree in music or Pol. A detailed formal and stylistic examination of music selected from the major style periods. Development of the analytical skills necessary for theoretical study at the graduate level.

512 Advanced Orchestration (3:3:0). Prereq Baccalaureate degree in music with a minimum of three hrs of study in orchestration or Pol. Intensive study through analysis and arranging, of advanced methods of instrumentation. Scoring for large forces. Twentieth-century vocal and instrumental techniques such as multiphonics. Unusual instruments. New methods of notation. Late twentieth-century performance practices.

513 Advanced Topics in Music Theory (3:3:0). Prereq Baccalaureate degree in music or Pol. An intensive study and analysis of music from the theoretical point of view, comparing trends in compositional techniques through various works. May be repeated for credit as topics change.

531 Advanced Topics in Music History and Literature (3:3:0). Prereq Baccalaureate degree in music or Pol. A
thorough examination of a specific musical style, genre, composer, compositional school, or historical development. Primary and secondary source materials will be studied in historical and/or analytical contexts. May be repeated for credit as topics change.

541 Chamber Music Literature (3:3:0). Prereq Baccalaureate degree in music or Pol. A historical and analytical study of the extensive literature for chamber ensembles (trios through nonets) in various instrumental combinations, from the seventeenth through the twentieth centuries.

543 Concerto Literature (3:3:0). Prereq Baccalaureate degree in music or Pol. A historical and analytical study of the concepts which produced the concerto form and its extensive literature, from the seventeenth through the twentieth centuries.

561 Advanced Topics in Music Education (1-3:1-3:0). Prereq Degree in music education or Pol. Intensive examination of specific areas of concern to music educators engaged in teaching vocal, instrumental, and general music at all levels or functioning as private studio teachers. Individual research, group discussions, and participation in related activities. Field experience may be required.

562 The Psychology of Music Teaching and Learning (3:3:0). Prereq Baccalaureate degree in music or Pol. A study of the learner's musical behaviors (affective, cognitive, and psychomotor) in an effort to devise an empirically-based teaching method founded on learning principles.

581 Graduate Choral Ensembles (1:0:3). Prereq Audition. Performance of works from the choral repertoire. Public concerts are given. May be taken for credit four times.

583 Symphonic Winds (1:0:3). Prereq Audition. Performance of works from the band repertoire. Public concerts are given. May be taken for credit four times.

585 Chamber Ensembles (1:0:3). Prereq Audition. Performance of works from the chamber music repertoire. Public performances are given. May be taken for credit four times.

587 Chamber Orchestra (1:0:3). Prereq Audition. Performance of works from the chamber orchestra repertoire. Public concerts are given. May be taken for credit four times.

597 Advanced Topics in Conducting (3:3:0). Prereq Baccalaureate degree in music with a minimum of two sem study in conducting or Pol. Intensive study of an advanced topic in conducting chosen according to interests of students and instructor from such topics as the following: (1) Choral Music Performance Techniques and Score Preparation; (2) Wind Ensemble Performance Techniques and Score Preparation; (3) Orchestral Performance Techniques and Score Preparation; (4) Performance Practices in Choral Music before 1750; (5) Rhythmic Analysis as a Guide to Score Interpretation in Music of All Periods. Maximum of six cr may be earned.

662 Introduction to Research in Music Education (3:3:0). Prereq Baccalaureate degree in music with certification to teach music or Pol. Development of skills, attitudes and understanding necessary in doing and reporting research in the teaching of music, incl philosophical bases, scope and organization, stylistic practices in writing the research report, the study of materials and resources in music, education, music education, and the proper use of library and other research services.

663 Aesthetics of Music Education (3:3:0). Prereq Baccalaureate degree with certification to teach music or Pol. A study of the philosophical foundations of contemporary music education, as well as a critical examination of music programs and activities in aesthetic education, and efforts by the music education establishment to enhance them.

671, etc Graduate Private Music Instruction. See descriptions at end of music section.

684 Graduate Lecture-Recital (1-3:0:0). Coreq Graduate Private Music Instruction at the three-credit level. A combination of musical performance and scholarly presentation on a well-defined topic. A public presentation is required. Preparation of the program will be directed by a member of the full-time music faculty in consultation with the student's private music instructor. May be taken for a maximum of six credits.

688 Advanced Musical Theatre Techniques (1-3:1-2:6). Prereq Audition and Pol. Preparation and presentation of works or parts of works from the musical theatre repertoire (opera, operetta, musical comedy). One hour of lecture per week and (for each credit pursued) two hours of practicum per week. Students will investigate applicable techniques through topically organized lectures and assignments, and in goal-oriented practicum sessions and rehearsals. Public performance(s) will be given.

699 Independent Study (1-3:0:0). Prereq Baccalaureate degree in music and Pol, the music faculty and the department chair. Individual research and study in one of the areas of concentration available in the Master of Arts degree with a major in music. May be taken for a maximum of six credits.

798 Graduate Recital (1:0:0). Prereq At least three credits in Graduate Private Music Instruction in the area of concentration at the three-cr level. Coreq Concurrent enrollment in Graduate Private Music Instruction at the three-credit level. A public performance in the area of concentration.

800 Studies for the Doctor of Arts in Education (var cr). Prereq Open only to D.A.Ed. students admitted to study in music. Program of studies designed by student's discipline director and approved by student's doctoral committee that brings the student to participate in the research, performing, or creative activity of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollment may be repeated.

Graduate Private Music Instruction

To earn two or three credits per sem, a student takes 14 one-hour private music lessons. In Graduate Private Music Instruction—Accompanying, a number of these may be spent in a group—practicum situation at the instructor’s discretion. The three-credit sequence is designed for students who will work toward the M.A. degree with a concentration in performance, composition, conducting, or
accompanying. Instruction is offered on the following: piano, organ, harp, classic guitar, voice, the standard band and orchestral instruments, composition, conducting and accompanying. The Private Music Instruction Fee applies.

621, 622, 623, 624 Graduate Private Music Instruction—Composition (2:0:1 for each).
625, 626, 627, 628 Graduate Private Music Instruction—Composition (3:0:1 for each). Prereq for Musi 621 and 625: Portfolio of compositions submitted to the faculty and an interview with a faculty committee.
641, 642, 643, 644 Graduate Private Music Instruction—Accompanying (2:0:1 for each).
671, 672, 673, 674 Graduate Private Music Instruction—Instrumental/Vocal (2:0:1 for each).
675, 676, 677, 678 Graduate Private Music Instruction—Instrumental/Vocal (3:0:1 for each). Prereq for MUSI 671 and 675: Audition.
691, 692, 693, 694 Graduate Private Music Instruction—Conducting (2:0:1 for each).

Faculty

Ailinger, Rita L., Ph.D., The Catholic University of America, 1974; Associate Professor

Carty, Rita M., D.N.Sc., The Catholic University of America, 1977; Associate Professor

Connelly, Catherine E., D.N.Sc., The Catholic University of America, 1979; Associate Professor

Dienemann, Jacqueline A., Ph.D., The Catholic University of America, 1983; Assistant Professor

Feeg, Veronica D., Ph.D., Pennsylvania State University, 1979; Assistant Professor

Kopac, Catharine A., M.N., Pennsylvania State University, 1976; Assistant Professor

Liu, Yuen Chou, Ph.D., New York University, School of Education, 1972; Associate Professor

Millonig, Virginia H., Ph.D., University of Maryland, 1981; Associate Professor

Shannon, Moira D., Ed.D., The Catholic University of America, 1978; Associate Professor

Silva, Mary E., Ph.D., University of Maryland, 1976; Professor

Smith, Kitty S., M.S.N., The Catholic University of America, 1960; Associate Professor

Walker, Dorothy J., J.D., Boston College Law School, 1979; Professor

Nursing, M.S.N.

The M.S.N. accredited master of science in nursing program prepares nurses for a variety of leadership roles in the health care delivery system. The nursing major in nursing administration prepares nurses to function in middle management positions in hospitals, nursing homes, community health agencies, and other health care facilities. The major in long-term care prepares nurses to provide and manage long-term care of individuals, families, and groups, including the chronically ill, the elderly, and others with self-care limitations. The major in gerontological nursing prepares nurses to apply the nursing process to the care of the elderly. A variety of health care settings are used for clinical practice experiences.
Graduate Catalog 1985-1986
George Mason University

Admission Requirements

In addition to meeting the Graduate School admission requirements, an applicant to this program must have a cumulative grade point average of 3.00 (on a 4.00 scale) for the last 60 hours of undergraduate work, hold an active Registered Nurse License, submit three letters of recommendation and submit the results of the general aptitude test of the Graduate Record Examination. Applicants must have successfully completed undergraduate statistics and research courses.

Degree Requirements

The master’s program in nursing requires 36 semester hours of graduate credit. Of these, a 9-hour core consists of course work in the theoretical foundations of nursing, approaches to data analysis in nursing research, and a seminar in concepts of nursing research. Twelve hours must be completed in the concentration areas of nursing administration, gerontology, or long-term care. The student has the option of writing a thesis or working on a research project.

Core Courses—Required of all students

NURS 755 Theoretical Foundations Related to Nursing (3)
NURS 759 Approaches to Data Analysis in Nursing Research (3)
NURS 790 Seminar in Concepts of Nursing Research (3)
NURS 791 Projects in Nursing Research (3) or NURS 799 Thesis (3-6)

Nursing Majors - Select one major

Major in Nursing Administration at the Middle Management Level
NURS 763 Seminar in Nursing Administration at the Middle Management Level I (3)
NURS 765 Practicum in Nursing Administration at the Middle Management Level I (3)
NURS 766 Seminar in Nursing Administration at the Middle Management Level II (3)
NURS 768 Practicum in Nursing Administration at the Middle Management Level II (3)

Major in Long-Term Care
NURS 773 Nursing in Long-Term Care I (3)
NURS 775 Practicum in Long-Term Care I (3)
NURS 776 Nursing in Long-Term Care II (3)
NURS 778 Practicum in Long-Term Care II (3)

Major in Gerontological Nursing
NURS 783 Principles and Theory of Gerontological Nursing Practice I (3)
NURS 785 Practicum in Principles and Theory of Gerontological Nursing I (3)
NURS 786 Principles and Theory of Gerontological Nursing Practice II (3)
NURS 788 Practicum in Principles and Theory of Gerontological Nursing Practice II (3)

Nursing Electives six semester hours — Required of all students

Related Disciplines six semester hours — Required of all students

Continuing Nursing Education

See Certificates and Additional Graduate Courses.

Nursing Courses (NURS)

511 Anthropology of Health (3-3:0). Cross-cultural issues of health and illness are explored from the standpoint of medical anthropology theory. Cultural dimensions of the developmental cycle and health care systems.

512 Nursing Action and the Political Process (3-3:0). Explores issues of power, political and legislative action as they relate to nursing. Effects of political establishment on nursing practice.

518 Cancer: Theoretical Foundations and Nursing Interventions (3-3:0). Focus on current knowledge available about the nature of cancer and present treatment modalities. Emphasis on development of a concept of nursing clients with cancer, on an understanding of cancer as a major chronic illness, and on assistance available to clients with cancer and their families.

519 Design of Complex Nursing Systems for Individuals and Groups Affected by Cancer (3-3:0). Prereq NURS 518. Concerns and problems confronted by client, family, and nurse in providing effective health care. Emphasis on impact of identified physiologic and psychosocial problems on each of these agents and range of strategies available for comprehensive intervention.

525 Independent Nursing Practice (3-3:0). Overview of designs for independent practice and their conceptual frameworks. Problems inherent in pioneering a private nursing practice are delineated with opportunities to explore innovative approaches and alternatives for independent nursing practice.

550 Pathophysiologic Bases for Major Health Deviations of Individuals (3-3:0). Health deviations in individuals occurring in U.S. which require long-term and/or terminal health care interventions. Presented within developmental framework, as they influence physiologic integrity at the cellular level. Focus on the human being as a whole open system. Complex health programs from the perspective of maintaining homeodynamics.
569 Cultural Dimension of Aging (3:3:0). Impact of cultural definitions of aging, research methodologies, and findings of cross-cultural studies. Implications for health care and nursing.

615 Survey of Research in Human Development: Implications for Nursing Intervention (3:3:0). Seminar presentation of selected research in human development across the life span. Discussion of research findings focuses on application to individuals and families with long-term health problems and implications for nursing intervention.

621 Components of Health Appraisal (3:2:3). Principles, skills, and techniques in health appraisal of clients of all ages. Methods of recording, interpreting, and auditing problem-oriented profiles provide a framework for development of a health appraisal data base.

622 Clinical Management in Primary Care Nursing (3). Prereq NURS 550 and NURS 621. Students should be currently enrolled in, or have completed, the courses in their nursing major. Students with an M.S.N. from an accredited nursing program will be considered on an individual basis. Analysis of the scope of the advanced nurse clinician role in the management of primary care nursing. An integrated approach to the assessment and management of common physical and psychosocial health problems. Advanced skills in biopsychosocial assessment and development of plans for health maintenance.

635 Gerontologic Nursing (3:3:0). Multidimensional process of aging, its effects on functional capacity of the elderly, and implications for nursing intervention. Focus on nursing interventions strengthening the available friend/family and community support systems and promoting elderly clients' capacity for self-care.

636 Gerontologic Nursing II: Health Deviations (3:3:0). Study of health deviations common to aging, their effects on functional capacity and implications for nursing intervention. Restorative and rehabilitative nursing interventions focus on the client's capacity for self-care.

640 Interpersonal Dimensions in Nursing (3:3:0). Examination of interpersonal relationships in which nurses are involved in various aspects of nursing leadership and advanced professional practice. Relates theoretical foundations to the effective development of relationships within the framework of the nursing process.


650 Health Care and Law (3:3:0). This is a survey course designed to introduce students to the impact of courts and legislatures on rights and responsibilities of health care consumers and health care providers. Focus is on definitions of standard of care, legal theories of liability, and legally effective consent.

655 Quality Assurance in Nursing (3:3:0). Issues, trends, and methodologies in nursing quality assurance with particular emphasis on roles and responsibilities of the nurse middle manager in health-related agencies.

656 Seminar in Supervision of Nursing in Health Care Agencies (3:3:0). Prereq Completion of MGMT 301, MGMT 610, or equiv. Synthesis of role and functions of the professional nurse supervisor and the process of supervision in facilitating the provision of nursing care to clients in health care agencies.

657 Overview in Nursing Education (3:3:0). Prereq Admission to the graduate nursing program or post-master's status. Focus on history and philosophy of nursing education; principles and methods of teaching and learning used in nursing; and current issues, trends, and research in nursing education.

658 Practicum and Seminar in Nursing Education (3-6:2:7). Prereq Admission to the graduate nursing program or post-master's status; NURS 657 is pre- or coreq. Analysis and application of the dynamics of nursing education. Emphasis on selected curriculum designs with application of instructional strategies appropriate to implementing selected programs.


698 International Nursing: Theoretical and Practical Dimensions (3:3:0). International nursing organizations, programs, and projects in relation to comparative health care systems. Theoretical conceptualization, research approaches, and methodological issues in the development of international nursing.

699 Practicum in International Nursing (3). Pre- or coreq: NURS 698, International Nursing: Theoretical and Practical Dimensions. Practicum in International Nursing in a selected international health agency. The nursing programs are analyzed using a health care systems framework.


759 Approaches to Data Analysis in Nursing Research (3:3:0). Prereq Admission to grad nursing program. Examination of uni- and bivariate procedures appropriate for analyzing nursing research data. Emphasis on selection and application of procedures in relation to level of data and type and size of sample in nursing research.

763 Seminar in Nursing Administration at the Middle Management Level I (3:3:0). Prereq Admission to grad nursing prog; NURS 755 and MGMT 610, 611, or equiv are pre- or coreq. Utilization of administrative theory and management principles and processes as related to roles and functions of the nurse in middle management in health-related agencies.

765 Practicum in Nursing Administration at the Middle Management Level I (3-0:0). Prereq Admission to grad nursing prog; NURS 755. NURS 753 is pre- or coreq. Application of administrative theory and management principles and processes in a selected health-related
agency. Roles and functions of the nurse in middle management. Lab arranged.

766 Seminar in Nursing Administration at the Middle Management Level II (3:3:0). Prereq NURS 763. Roles and functions of the nurse in middle management as the nurse manager develops patterns of nursing care, articulating nursing education and nursing service.

768 Practicum in Nursing Administration at the Middle Management Level II (3:3:0). Prereq NURS 763, 765; NURS 766 is pre- or coreq. Implementation and integration of the roles and functions of the nurse in middle management. Emphasis on utilization of appropriate management principles and processes in a selected health-related agency. Lab arranged.

773 Nursing in Long-Term Care Nursing I (3:3:0). Prereq Admission to grad nursing prog; course in health assessment, NURS 755. Foundational theory relevant to the biophysical, psychological, and cultural self-care needs of individuals and families who have long-term-care needs. Emphasis on potential long-term problems across the life span; includes elderly and chronically-ill.

775 Practicum in Long-Term Care I (3:3:0). Prereq Admission to grad nursing prog, NURS 755, course in health assessment, pre- or coreq NURS 773. Opportunity to apply the nursing process as it relates to the care of individuals and families with existing or potential long-term health problems in a selected clinical setting. Lab arranged.

776 Nursing in Long-Term Care II (3:3:0). Prereq NURS 773. Expansion of selected content in long-term care as it relates to advanced clinical nursing practice. Collaboration with other health care providers in groups and communities is examined. Emphasis on evaluation of nursing care and advanced standards of practice.

778 Practicum in Long-Term Care II (3:3:0). Prereq NURS 773, 776; NURS 776 is pre- or coreq. Opportunity to apply roles of an advanced nurse clinician in a selected clinical setting. Lab arranged.

783 Principles and Theory of Gerontological Nursing Practice I (3:3:0). Prereq Admission to grad nursing prog, course in health assessment, NURS 755. Principles and theory of gerontological nursing practice; focus on normal aging process. A holistic approach will be taken to the variety of assessment techniques and interventions available to the nurse clinician focusing on health maintenance and prevention in older adults.

785 Practicum in Principles and Theory of Gerontological Nursing Practice I (3:3:0). Prereq Admission to grad nursing prog, course in health assessment, NURS 755; NURS 783 is pre- or coreq. Application of the principles and theory of gerontological nursing practice with a focus on the normal aging process. Theoretical foundation for this practicum will be provided in the content on NURS 783.

786 Principles and Theory of Gerontological Nursing Practice II (3:3:0). Prereq NURS 783. Principles and theory of gerontological nursing practice with a focus on the health deviations common to the aged. The nursing process, as it applies to the ill elderly, is explored with regard to rehabilitation, comprehensive care, evaluation, resources, crises intervention, and interdisciplinary collaboration.

788 Practicum in Principles and Theory of Gerontological Nursing Practice II (3:3:0). Prereq NURS 783, 785; NURS 786 is pre- or coreq. Application of roles of advanced nurse clinician in selected clinical settings. Lab arranged.

790 Principles and Methods of Nursing Research (3:3:0). Prereq Admission to grad nursing prog; NURS 755, 759. NURS 763, 773, 783 are pre- or coreq. Principles and methods of nursing research applied to problem identification, research design, and data collection and measurement.

791 Projects in Nursing Research (3:0:0). Prereq NURS 790. Research projects by students, individually or in groups, under direction of faculty.

799 Thesis (3–6:0:0). Prereq NURS 790. Exploration of a nursing problem using appropriate research methodology under supervision of graduate faculty member(s).
Physical Education

Faculty

Cooper, John H., P.E.D., Indiana University, 1955; Professor

Metcalf, James A., Ph.D., University of Maryland, 1970; Associate Professor

Schack, Frederick K., Ph.D., Ohio State University, 1976; Associate Professor

Stein, Julian U., Ed.D., George Peabody College, 1966; Professor

Physical Education, M.S.

This program is designed to serve the needs of those currently employed in teaching, sports, or fitness fields; those with baccalaureate degrees in physical education who desire to improve their skills before entering a career; and those who wish to earn a master’s degree as a prelude to additional graduate work in physical education. Students may emphasize teaching or exercise science in selecting a degree program.

Admission Requirements

In addition to fulfilling the Graduate School admission requirements, the applicant must:

1. Hold a bachelor’s degree in physical education or a related field
2. Submit three letters of recommendation
3. Submit transcripts of all college course work
4. Have completed courses in human anatomy and physiology, kinesiology, and exercise physiology. Applicants who do not meet these requirements may be offered provisional or non-degree status in accordance with the general regulations of the Graduate School.

Departmental Degree Requirements with Emphasis on Teaching

In addition to fulfilling the Graduate School degree requirements, the candidate must complete the following program:

1. Core Courses (Semester Hours) (12)
   EDU 590 Educational Research (3)
   EDU 591 Educational Statistics (3)
   PHED 508 Seminar in Special Physical Education (3)

   PHED 604 History of Sport and Physical Education through the Middle Ages (3) or
   PHED 605 History of Sport and Physical Education from Renaissance to Present (3).

2. Twelve semester hours selected from the following:
   HEA 612 Scientific Foundations of Health and Fitness (3)
   PHED 650 Scientific Principles of Motor Learning (3)
   PHED 660 Management and Administration of Physical Education and Sports (3)
   PHED 671 Teaching Physical Education in the Secondary School (3)
   PHED 673 Program Development in Physical Education and Sport (3)
   PHED 680 Seminar in Current Issues in Physical Education and Sport (3)
   PHED 706 Comparative Physical Education and Sport (3).

3. Six to nine hours of electives, taken at the graduate level, selected from physical education, health education, or any other discipline. The number of electives depends upon the choice between a thesis (6) or project (3). Electives in physical education in addition to the alternatives shown above:
   PHED 610 Advanced Exercise Physiology and Sports Medicine (3)
   PHED 616 Motor Behavior and Development (3)
   PHED 630 Health and Fitness Program Development (3).

4. Comprehensive examinations (oral and written) completed successfully at the end of course work prior to beginning the thesis or project.

5. PHED 799 Thesis (6) or PHED 798 Project (3) option (6–3). Total (36)

Departmental Degree Requirements with Emphasis on Exercise Science

In addition to fulfilling the Graduate School degree requirements, the candidate must complete the following program:

1. Core Courses (Semester Hours) (12)
   PHED 630 Exercise, Health and Fitness Program Development (3)
   PHED 610 Advanced Exercise Physiology and Sports Medicine (3)
   HEA 612 Scientific Foundations of Health and Fitness (3)
   PHED 616 Motor Behavior and Development (3)
   PHED 650 Scientific Principles of Motor Learning (3)
   PHED 660 Management and Administration of Physical Education and Sports (3)
   PHED 673 Program Development in Physical Education (3)

2. Twelve semester hours selected from the following:
   HEA 612 Scientific Foundations of Health and Fitness (3)
   PHED 650 Scientific Principles of Motor Learning (3)
   PHED 660 Management and Administration of Physical Education and Sports (3)
   PHED 673 Program Development in Physical Education and Sport (3)

   PHED 630 Exercise, Health and Fitness Program Development (3)
   PHED 610 Advanced Exercise Physiology and Sports Medicine (3)
   HEA 612 Scientific Foundations of Health and Fitness (3)
   PHED 616 Motor Behavior and Development (3)
   PHED 650 Scientific Principles of Motor Learning (3)
   PHED 660 Management and Administration of Physical Education and Sports (3)
   PHED 673 Program Development in Physical Education (3)

   Total (36)
Graduate Assistantships

Administrative, research, and teaching-related graduate assistantships are available in the Department of Health and Physical Education. Persons awarded assistantships may be assigned to one or more of the various programs, services, or faculty in the department. To be eligible for an assistantship, a student must be admitted to graduate status and take a minimum of six semester hours of graduate credit each semester. Interested students should contact the Health and Physical Education Department office for applications. Information about other types of graduate financial assistance can be found in the Student Information section of this catalog.

PHED 706 Comparative Physical Education and Sport (3)
EDUC 590 Educational Research (3)
EDUC 591 Educational Statistics (3)
PHED 500 Workshop (3) or elective with approval of adviser
PHED 798 Project (3)
Total (36)

Physical Education Courses (PHED)

500 Workshop in Physical Education (1-3:0:0). Prereq graduate standing or Pol. Concentrated full-time workshops, weekend seminars and workshops dealing with selected topics in physical education and ancillary fields. May be repeated. No more than six sem hr may be applied for degree cr.

508 Seminar in Special Physical Education (3:3:0). Prereq graduate standing or Pol. Discussion of current problems, issues, and research in special physical education. Practica may be included.

599 Independent Study in Physical Education (1:3:0:0). Prereq graduate standing or Pol. Study of a problem area in physical education research, theory, or practice under the direction of faculty. May be repeated, but no more than three hr total cr may be given.

604 History of Sport and Physical Education through the Middle Ages (3:3:0). Prereq graduate standing or Pol. Role of sport and physical education in ancient civilizations through the Middle Ages.

605 History of Sport and Physical Education from Renaissance to Present (3:3:0). Prereq graduate standing or Pol. Role of sport and physical education in Europe and its impact on developments in America.

610 Advanced Exercise Physiology and Sports Medicine (3:3:0). Prereq PHED 450, graduate standing or equiv or Pol. Lecture, demonstration, lab research and seminar experiences in the application of research findings to the understanding of physiological function and exercise in prevention and rehabilitation of injuries.

616 Motor Behavior and Development (3:3:0). Prereq graduate standing or Pol. Human motor behavior development and theory with application to evaluation of skill acquisition.

630 Exercise, Health and Fitness Program Development (3:3:0). Prereq graduate standing or PoD. Health and exercise program development related to fitness and health of special adult populations. Three to six hours of field experience.

650 Scientific Principles of Motor Learning (3:3:0). Prereq graduate standing or Pol. Analysis and application of scientific principles of movement to instructing sport skills in physical education and sport programs.

660 Management and Administration of Physical Education and Sports (3:3:0). Prereq graduate standing or Pol. Advanced study in fiscal management, legal liability, facility planning, and policy development.

671 Teaching Physical Education in the Secondary School (3:3:0). Prereq graduate standing or Pol. Advanced study of methods, materials, content and organization of physical education programs. Emphasis on curriculum planning, current methodologies, and trends.

673 Program Development in Physical Education and Sport (3:3:0). Prereq graduate standing or Pol. Curriculum design and program development with attention to organization and implementation of physical education and sports programs.

680 Seminar in Current Issues in Physical Education and Sport (3:3:0). Prereq graduate standing or Pol. Identify and analyze current issues in physical education and sport.

706 Comparative Physical Education and Sport (3:3:0). Prereq graduate standing or Pol. Study of present-day physical education and sport programs in selected countries.

798 Project (3:0:0). Prereq graduate standing or Pol. An individualized project applying appropriate methodology to a health problem or issue under supervision of graduate faculty member(s). Topic must be approved prior to registering for project cr.

799 Thesis (3:6:0:0). Prereq graduate standing or Pol. Exploration of a physical education problem using appropriate research methodology under supervision of graduate faculty member(s).
Physics

Faculty

Ceperley, Peter, Ph.D., Stanford University, 1973; Associate Professor

Dworzecka, Marysia, Ph.D., Warsaw University, Poland, 1969; Associate Professor

Ehrlich, Robert, Ph.D., Columbia University, 1964; Professor

Ellsworth, Robert, Ph.D., University of Rochester, 1965; Associate Professor

Kafatos, Minos, Ph.D., Massachusetts Institute of Technology, 1972; Professor

Applied Physics, M.S.

The master of science in applied physics program is designed to serve people employed at technically oriented area organizations, recent graduates and others. The program is "applied" in that: (1) it emphasizes those areas of physics of greatest importance in industry; (2) it allows electives in computer science engineering and mathematics; and (3) it includes elective courses in cross-disciplinary areas such as biophysics, geophysics, physics of air pollution, physics of energy, etc.

All courses will be offered during evening or late afternoon hours to allow full-time employed people to easily attend. For those recent graduates who are not employed full-time, financial aid may be available in the form of teaching assistantships. These positions require the teaching of several elementary physics laboratories, perhaps under the supervision of a faculty member or performing some other duties for the department.

For those who are employed full-time, the program allows up to 6 credits (of a total of 33) to be earned "on the job" through an optional 3-credit research project or an optional 6-credit master's thesis, both of which are done under the guidance of a faculty member.

Admission Requirements

Those holding a baccalaureate degree in physics or a related field received from an accredited institution who obtained a GPA of 2.75 (out of 4.00) in their last sixty hours are invited to apply for admission. If the baccalaureate degree is in a field other than physics, the applicant should have taken several courses beyond the introductory physics courses, such as junior-level classical mechanics, electricity, and magnetism or electronics. An applicant may be required to make up one or two deficiencies, based on a graduate physics adviser's assessment, and still be permitted to enroll in the program. Two letters of recommendation must be submitted, preferably from former professors. The Graduate Record Aptitude exam and the GRE advanced test in physics are recommended for applicants who received their baccalaureate degree within the last five years. A less recent bachelor's recipient may wish to present a statement of his/her work experience in lieu of the GRE.

Degree Requirements

A candidate for the degree must successfully complete 33 credits as follows:

1. Twelve-credit core consisting of PHYS 510 plus three of the four courses: PHYS 511, 512, 513, 514:
   - PHYS 510 Mechanics of Continuous Media
   - PHYS 511 Applied Electromagnetic Theory
   - PHYS 512 Solid State Physics and Applications
   - PHYS 513 Thermodynamics and Statistical Mechanics
   - PHYS 514 Quantum Mechanics and Atomic Physics

2. Twenty-one credits of electives, of which all but six credits must be in physics. The remaining six may be in physics, engineering, mathematics, or computer science. The elective courses in physics may be chosen from the following sample courses (or others) as they are offered under the "umbrella" of PHYS 590 Selected Topics in Physics. The availability of specific courses will depend on the demand for them and the availability of faculty resources. Students aware of a sizeable need for a given course either at their place of employment or elsewhere are encouraged to bring this to the attention of the Physics Department.
   
   Sample: PHYS 590 Selected Topics in Physics offerings:
   - Advanced Applied Mechanics
   - Biophysics
   - Electro-optics
   - Electronic Devices and Materials
   - Geophysics
   - Nuclear Physics
   - Physics and Computers
   - Medical Physics
   - Materials Science

   In addition, the following two electives are offered:
   - PHYS 799: Master's Thesis
PHYS 798: Research Project

The research project may be performed at a student's place of employment with the concurrence of a faculty adviser. The thesis would be a more substantial piece of work performed under the supervision of a major professor and requires the student to make an oral defense. PHYS 798 may be taken only once.

A candidate for the degree must pass a comprehensive exam administered once a year. The comprehensive exam will include a core (based on the core courses required), and a number of other sections in which a choice of areas will be permitted.

Astronomy Course (ASTR)

505 Fundamentals of Astronomy (3:3:0). Prereq grad stdg or Pol. Emphasis on the connection of astronomy to other disciplines as well as the recent developments in astronomy. Planet earth, its origin and past history and the origin of life. Ancient, Renaissance, and modern astronomers. Basic physics. Tools of the astronomer. The solar system, the sun, stars and our galaxy. Quasars, general relativity and cosmology. Rec for teachers of general science.

Physics Courses (PHYS)

500 Physics for High School Teachers (3:3:0). Prereq Certification as a secondary school physics instructor or PoD. Techniques of teaching high school physics. Intro to modern physics with emphasis on concepts rather than mathematical formalism. Recent developments in physics.

501 Physics Laboratory Techniques for High School Teachers (3:3:0). Prereq grad stdg. Theory and performance of experiments applicable to high school teaching with practical sessions on use of lab apparatus and computer. Recommended for high school teachers of physics.

502 Introduction to Quantum Mechanics and Atomic Physics (3:3:0) (Same as PHYS 402). Prereq PHYS 303 or Pol. Experimental basis of quantum mechanics; the wave function; systems in one, two, and three dimensions.

510 Mechanics of Continuous Media (3:3:0). Prereq PHYS 303 and 305. Study of continuous media. Incl physical perspective, mathematical formulation, and solution of problems in ideal fluids, viscous fluids, waves in fluid media, turbulence, thermal convection, stability considerations, elastic deformations, stress-strain tensor and body waves in elastic media.


512 Solid State Physics and Applications (3:3:0). Prereq PHYS 402 or 502. Crystal structures, binding, lattice vibrations, the free electron model, metals, semiconductors and semiconductor devices, superconductivity, magnetism.


520 The Physics of Energy and Environmental Technology (3:3:0). Prereq B.A. or B.S. degree in natural science or mathematics or Pol. Contemporary problems of energy and the environment with emphasis on the underlying principles of physics within the constraints of engineering and economics. Intended for those pursuing careers in energy research and development, business administration, economics, ecology, and high school science instruction.

590 Selected Topics in Physics (3:3:0). Prereq grad stdg or PoD. Selected topics from recent theoretical developments and applications. Designed to satisfy the needs of the professional community to keep abreast of current developments.

798 Research Project (3:0:0). Prereq 9 hr of grad-level course work and Pol. Project to be chosen and completed under the guidance of a grad faculty member and which results in an acceptable technical report.

799 Master's Thesis (3-6:0:0). Prereq 9 hr of grad-level course work and Pol. Project to be chosen and completed under the guidance of a grad faculty member and which results in an acceptable technical report and an oral defense.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in physics. Program designed by student's discipline director and approved by student's doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.
Psychology

Faculty

Allen, John A., Ph.D., North Carolina State University, 1971; Associate Professor

Barocas, Ralph, Ph.D., Pennsylvania State University, 1964; Professor

Blaha, John, Ph.D., Ohio State University, Associate Professor

Boehm-Davis, Deborah A., Ph.D., University of California, 1980; Associate Professor

Boneau, Alan C., Ph.D., Duke University, 1957; Professor

Buffardi, Louis C., Ph.D., Kansas State University, 1970; Associate Professor

Chapanis, Alphonse, Ph.D., Yale University, 1942; Distinguished Adjunct Professor

Erdwins, Carol J., Ph.D., Washington University, 1975; Associate Professor

Flinn, Jane M., Ph.D., The George Washington University, 1974; Associate Professor

Gessner, Theodore L., Ph.D., University of Maryland, 1971; Associate Professor

Golperud, Eric, Ph.D., State University of New York at Buffalo, 1979; Assistant Professor

Holt, Robert W., Ph.D., University of Illinois, 1978; Associate Professor

King, David J., Ph.D., University of Maryland, 1958; Professor

Lehman, Elyse B., Ph.D., The George Washington University, 1970; Associate Professor

Mandes, Evans J., Ph.D., The George Washington University, 1966; Professor

Manning, Martha M., Ph.D., Catholic University of America, 1981; Assistant Professor

Mellinger, Jeanne C., Ph.D., University of Chicago, 1952; Associate Professor

Moretz, Walter J., Ph.D., Florida State University, 1970; Associate Professor

Pasnak, Robert, Ph.D., Pennsylvania State University, 1969; Professor

Pence, Earl, Ph.D., Virginia Polytechnic Institute, 1980; Adjunct Assistant Professor

Rugel, Robert P., Ph.D., Florida State University, 1971; Associate Professor

Sanford, James F., Ph.D., Kansas State University, 1971; Associate Professor

Smith, Robert F., Ph.D., University of Wisconsin, 1976; Associate Professor

Tyer, Zita E., Ph.D., Texas Tech University, 1968; Professor

Wahl, Otto F., Ph.D., University of Pennsylvania, 1974; Associate Professor

Psychology, M.A.

The Department of Psychology offers an M.A. degree in industrial, school, life-span development, or general psychology. The Department does not offer an M.A. in clinical or counseling psychology, therefore, most M.A. students may not enroll in the clinical skills courses such as psychological assessment and psychotherapy courses.

The industrial psychology specialization is designed to provide training in two areas. Students may specialize in industrial-organizational psychology, which focuses on the application of psychological knowledge and methods to industry, government, or other organizations. The second area of specialization within the industrial psychology specialization is Human Factors, which focuses on psychological knowledge regarding man-machine interfaces.

The school psychology specialization is designed to prepare students for endorsement as fully certified school psychologists in Virginia and in the majority of states. It is approved by the Virginia Department of Education and meets the standards of the National Association of School Psychologists and the Division of School Psychology of the American Psychological Association.

The life-span development specialization provides training in two areas. Students may specialize in either child development or gerontology. These specializations focus on the psychological knowledge in these two areas. Students interested in...
gerontology may also earn a certificate in this area (for information about this certificate see section on Certificates in this catalog).

The general masters program is designed to provide students with a knowledge of the basic content areas in psychology. It emphasizes flexibility so that students may enroll in courses fitting their specific needs.

Admission Requirements
In addition to fulfilling the admission requirements of the Graduate School, applicants to the program are expected to have 15 hours in psychology and some experience with scientific methodology. Results of the Graduate Record Examination, three letters of reference, and a departmental application are also required. A Miller Analogies Test score may be submitted if applicants wish to give further evidence of ability. In addition, applicants are asked to submit a biographical statement, outlining their background and experience and describing their future goals in psychology. Generally, an overall GPA of 3.00 for the last sixty undergraduate hours and a minimum of 3.25 in undergraduate psychology courses are required. Work experience, publications, or special recommendations may compensate for deficiencies in other qualifications.

Masters in Industrial Psychology Specializing in Industrial/Organizational Psychology
Students must complete the following requirements:
9 semester hours minimum of specialization courses from PSYC 530, 634, 636, 637, and 638
Practicum or Thesis: 6 hours only with permission of Chair
Electives: no more than 6 hours of department-approved electives may come from outside the department

Masters in School Psychology
Students must complete the following requirements. Specific course requirements are delineated during advising after admittance to the school psychology program.
60 hours of graduate credit
50 hours of required courses. Written comprehensive examinations are administered after a minimum of 30 semester hours of course work. The comprehensive must be passed prior to the internship and the awarding of the master's degree.
Two practica are required during the second year of training. The first is completed at the Psychological Clinic of the University and the second is completed in the school system.
At the conclusion of course work, students may choose to complete a thesis or practical research project concurrent with the internship.
All students must complete a full year of internship.

Masters in Life-Span Development with Specialization in Child Development
The student must complete the following requirements:
30 semester hours of graduate credit
PSYC 702 and 703
PSYC 553
PSYC 704 and 6 hours of specialization courses from PSYC 508, 513, 565, and 669
Practicum or Thesis: 6 hours only with permission of Chair
Electives: 12 hours from PSYC 581, 666, 668, 617, 633, 653, 654, and 740, and no more than 6 hours of department-approved electives from outside the department.

Masters in Life-Span Development with Specialization in Gerontology
Students must complete the following requirements:
30 semester hours of graduate credit
PSYC 702 and 703
PSYC 553
PSYC 614, 704, and 786
Practicum or Thesis: 6 hours only with permission of Chair
Electives: 12 hours from PSYC 616, 631, 632, 633,
Masters in General Psychology

Students must complete the following requirements:
- 30 semester hours of graduate credit
- 12 hours of general psychology including PSYC 553 and 9 hours from PSYC 701, 702, 703, 704, and 705
- Practicum or Thesis: 6 hours only with permission of Chair
- Electives: up to 9 hours in graduate courses from other departments with the adviser’s approval.

Nondegree Status

Applicants who would qualify for degree status, but who are not applicants for a degree at the University, may be admitted to nondegree status. Nondegree status is not intended to be used as a qualifying program for degree status. While consideration may be given at a later date to the application of credits earned toward a degree program while in nondegree status, there is no assurance that such requests will be granted. If granted, however, no more than 12 semester hours of credit earned in nondegree status may be applied to a degree program.

Psychology, PSY.D.

The goal of the doctoral program is to train students to become professional psychologists. To accomplish this goal, the program has been developed to provide the student with both a knowledge of the basic content areas in psychology and the practical experience required to apply these principles to problems arising in non-academic work settings. The program contents are applied experimental/industrial and clinical/school psychology. The applied experimental/industrial program is focused on educating psychologists in the use of psychological knowledge and methods employed in settings such as industry, government, consulting organizations, research and development organizations, and trade organizations. Students develop skills in such areas as human engineering, human–computer interface design, training, personnel selection, and organizational psychology.

The clinical/school program focuses on educating clinical and school psychologists to deal with the unique demands of mental health or educational systems. A student in the first year of training in the clinical or school specializations is required to complete a minimum of 30 credits during the calendar year.

Admission Requirements

All applicants must provide the Graduate School with the following materials by February 15 to be considered for admission in the Fall semester:

1. A completed Graduate School Admission application
2. A completed Virginia Domicile Classification form, if applicable
3. A completed Department of Psychology application form
4. All undergraduate and graduate transcripts
5. Three letters of recommendation. (These letters should be requested from individuals who have a first-hand knowledge of the applicant’s work experience and/or academic capabilities)
6. Two or three page typewritten personal statement, describing professional goals, past training history and reasons for seeking the Psy.D
7. GRE scores taken within the past five years
8. A writing sample (optional). This may be selected from either academic papers, publications, or professional reports
9. An applicant in the final pool may be required to participate in an interview as part of the admissions process.

Admission Criteria

Space in the program is limited to a maximum of twenty new students per year, of which no more than ten will be in the clinical/school specialization and no more than ten in the experimental/industrial specialization. Thus, there are no “cutoff” scores for admission and no particular set of qualifications can guarantee admission. An applicant is expected to meet minimum criteria of a 3.00 undergraduate GPA and a 3.25 GPA in psychology course work.

Degree Requirements

The program of doctoral training in psychology can be perceived as having four educational components: (1) core courses; (2) upper-level specialty courses; (3) supervised practica, and (4) a

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dissertation. The program requires a minimum of 96 credit hours.

Core Courses

The core requirement consists of four proseminars, two quantitative courses and a course in history and systems. The 12 semester-hour proseminar sequence covers the basic subject matter identified by the American Psychological Association as the sine qua non of doctoral training: biological bases of behavior, social bases of behavior, cognitive-affective bases of behavior and individual behavior. After successful completion of thirty hours (including core courses), a student is awarded an M.A. in psychology.

Speciality Courses

The 700- and 800-level courses are designed to provide the doctoral candidates with greater depth of study in specific content areas. These advanced courses focus on the comprehensive study of theoretical, applied and methodological issues within the different speciality areas.

Practica

Both applied experimental/industrial and clinical/school students will be expected to perform at a satisfactory level in all practicum placements. The purpose of these practica is to provide a broad range of experiences in settings related to the student's fields of specialization. For example, individuals in the clinical specialization might take practica in adult assessment, child assessment, individual psychotherapy, and group psychotherapy in settings dealing with these areas. An individual in the experimental/industrial speciality might take practica in survey research, human factors, applied perception and training program development in organizations where those speciality areas are a focus. One practicum for applied experimental students will be in-house and will culminate in a formal paper.

Dissertation

The dissertation requirement is designed to demonstrate the student's ability to apply psychological principles to practical problems. The dissertation may involve an experimental approach to a basic or an applied problem or may organize and summarize in a scholarly fashion a project done in a practicum or internship placement.

Student Evaluation

A student in the doctoral program will be evaluated on the basis of grades, comprehensive examinations and communication skills. In doctoral courses, A and B are the only acceptable grades. In addition to satisfactory course performance, a student in the doctoral program must successfully complete a series of comprehensive examinations immediately after they have completed the core requirements. These exams are administered twice a year (January and June). A student who successfully completes the comprehensive examinations is admitted to doctoral degree candidacy and is then permitted to enroll in speciality courses at the 700 and 800 level. The applied emphasis of this program requires the development of communication skills. Written and oral communication skills will be assessed continuously throughout the program by faculty in the form of papers and reports. Students judged deficient in either communication area will be informed of the deficiency; they may be required to leave the program if the deficiency cannot be remedied.

Psychology Courses (PSYC)

506 Theories of Personality (3:3:0). Prereq PSYC 220. Comparative review of prevalent theories of personality with special emphasis on their fundamental models and their similarities and differences.

508 Theories of Development (3:3:0). Prereq PSYC 313 or 211. Major theories of infant and child development incl. works of Piaget, Freud, Erikson and Spitz.

513 Infant Development (3:3:0). Prereq PSYC 313 (210) or Pol. Examination of current issues, research methods and clinical evaluation techniques in the field of infant development.

530 Human Factors Engineering (3:3:0). Prereq An experimental lab course or Pol. Investigation of complex man-machine interactions found in industry today. Extensive empirical research findings are examined.

533 Seminar in Industrial/Organizational Psychology (3:3:0). Prereq PSYC 230 or PSYC 636 or Pol. Rotating topics (e.g. leadership theories and management development, performance appraisal) to be announced in advance. May be repeated for credit.

541 Survey Research (3:3:0). Prereq PSYC 300 or SOCI 221 or equiv. This course is designed to acquaint students with the theory, method, and practice of survey research. The course requires students to complete a survey research project.

548, 549 Practicum in Gerontology (3:3:0), (3:3:0). Prereq Completion of two of the three req core courses in the gerontology certificate program. Practical experience in a gerontological setting under supervision of a qualified
professional. One hundred-fifty contact hr per three sem hr cr.

553 Quantitative Methods I: Advanced Statistics (3:3:0). Prereq PSYC 300. Topics in intro psychological statistics from an advanced perspective. Additional topics are incl. Course provides intro to use of computer packages in data handling and analysis. Req for degree students. Req may be satisfied by demonstrating competence on examination.

559 Drugs, Hormones and Behavior (3:3:0). Prereq PSYC 372 or equiv or Pol. Overview of the chemistry of behavior, incl neurotransmitters, mechanisms of action of therapeutic drugs such as antidepressants, actions of hallucinogens and other psychoactive drugs, chemical theories of memory and effects of hormones on behavior.


564 Sensory Processes (3:3:0). Prereq PSYC 309 or 371. Intensive exploration of the neural foundations of sensory experience, with special emphasis on the processing mechanisms at different levels of the various sensory pathways.

565 Cognitive and Perceptual Development (3:3:0). Prereq six hr of developmental psychology or Pol. Experimental study of child development. Topics incl biogenetic factors in development, sensory processes, learning, perception, motivation, language, and cognitive development.

581/ENGL 581 Survey of Psycholinguistics (3:3:0). Prereq ENGL 391, or PSYC 305, or Pol. Study of the psychological basis of human language acquisition and competence, incl research on aphasia, association, autism, second language learning, grammatical transformations and the psychological reality of transformational rules.

592 Special Topics (3:3:0). Prereq Pol. Special topics reflecting interest in specialized areas.

614 The Psychology of Aging (3:3:0). Prereq Undergrad or grad course in aging. Review of the experimental literature in psychology of aging, incl intellectual functioning, personality and adjustment, minor and major adjustment problems and role changes in later life.


617 Child Psychopathology (3:3:0) F. Prereq PSYC 313 or 211 and 325. Intensive survey of major types of psychopathological disturbances of infancy and childhood.

618 Clinical Foundations (3:3:0). Prereq Open only to Psy.D. students. Focus on basic clinical/interational skills, incl basic therapy skills, psychodiagnostic interviewing, mental status exam, and interview management skills. Inc exposure to a variety of clinical settings and clients.


633 Evaluative Research in Psychology (3:3:0). Prereq PSYC 300 or Pol. Examination of research techniques that are specifically designed to evaluate the human effectiveness of organizations and mental health programs.

634 Seminar in Human Factors Engineering (3:3:0) Sp. Prereq PSYC 530 or grad experimental course in psychology or PSYC 701. Rotating topics (e.g. systems theory, human factors in computer systems, office automation) to be announced in advance. May be repeated for credit.

635 Topics in Organizational Psychology (3:3:0) F. Prereq PSYC 230 or 632, or BUAD 591. Selected topics reflecting interest in a specialized area of organizational psychology, announced in advance. Emphasis on recent experimental research literature related to the selected topic.

636 Survey of Applied Psychology (3:3:0). Prereq PSYC 300 or Pol. Intensive survey of the historical and current issues in the major areas of applied (non-clinical) psychology: personnel, social-organizational, human factors/engineering psychology.

637 Techniques in Applied Psychology (3:3:0). Prereq PoD. A skills-oriented course in the development and use of job analysis, task analysis, link analysis, performance appraisal, interview, and questionnaire techniques. Emphasis on group/individual projects.

638 Training: Psychological Contributions to Theory, Design, and Evaluation (3:3:0). Prereq PSYC 636 or Pol. Focus on the application of learning principles derived from psychological research in the development of training models and techniques of skill acquisition. Discussion of research designs and empirical results appropriate to training evaluation.

651 Quantitative Analysis of Experiments (3:3:0). Prereq PSYC 300. Intermediate of statistical techniques and introduction to computer packages. Required for master's and doctoral students. Requirement may be satisfied by demonstrating competence on examination.

652 Quantitative Methods II: Analysis of Variance (3:3:0). Prereq PSYC 300 and either 304, 305, or 309. Basic concepts in experimental design, fundamental assumptions in analysis of variance, analysis of variance and covariance designs and multiple comparison tests are also reviewed.

653 Research Methods I: Experimental and Research Design (3:3:0). Prereq PSYC 300 and either 304, 305 or 309. Open only to degree students in Psychology. An overview of the various research designs used in psychology. The use of these designs in applied settings will be discussed.

654 Naturalistic Methods in Psychology (3:3:0). Prereq PSYC 300 and either 304, 305 or 309. Theory and techniques involved in studying people in their natural environment. Primary emphasis is on quasi-experimental designs and methods of systematic observation.

662 Human Learning and Cognition (3:3:0). Prereq PSYC
304 or 305. Literature in verbal learning, transfer and retention is reviewed with special emphasis on recent research. Topics incl paired-associate and serial learning, free recall, organization in memory, concept identification and psycholinguistics.

666 Perception (3:3:0). Prereq PSYC 309. Important issues related to neurophysiological, sensory and cognitive aspects of perception are surveyed. Topics incl the general theories of Gibson, Brunswik and the Gestaltists, and some specialized models developed in recent years, especially information-processing models.

667 Experimental Study of Small Group Behavior (3:3:0). Prereq PSYC 231 and 653. Theories, methods and topics relevant to individual behavior in a small group setting. Effects of individual on the group, effects of the group on the individual and interaction effects among individuals.

668 Seminar in Cognition (3:3:0). Prereq PSYC 304, 305, or 309, or the psychology of thinking. Discussion of current theories and research on (1) the content of cognition, such as symbols, abstractions and cultural tools; and (2) the nature of human mental processes that enable the acquisition, organization and use of knowledge, such as attending, remembering and thinking.

669 Social and Personality Development (3:3:0). Prereq six hours of developmental psychology or Pol. Survey of socialization theory and research relevant to infant social relationships, development of aggressive and altruistic behaviors, sex-role development, moral development, parent and adult influences, social class, and cultural influences.

671 Role and Function of the School Psychologist (3:3:0) F. Prereq Open only to school M.A. students or Pol. Roles and functions of the school psychologist within the educational environment. Certification and ethical standards of the school psychologist are also considered along with current issues and trends.

678 Topics in School Psychology (1-6:0:0) F. Prereq Open to practicing school psychologists and advanced students in school psychology or Pol. Selected topics reflecting interest in a specialized area of school psychology. Content varies.

684 Psychological Counseling Techniques (3:3:0). Prereq Graduate standing or Pol. Application of various counseling techniques generated by current approaches to counseling. Students will be given experience in techniques used in contemporary practice.

687 Intervention Strategies in Alcohol and Polydrug Dependency (3:3:0). Prereq PSYC 616 or equiv and PSYC 684 or equiv, or Pol. Review of multidisciplinary theory and practice in treatment of the alcohol or polydrug dependent client. Emphasis on coordination of relationship counseling and psychotherapy with interventions derived from corrective education and vocational rehabilitation. Problems of transition from institutional to open community settings.

701 Psychology of Perception and Learning (3:3:0). Prereq Open only to degree students. A survey of concepts in perception and learning, including theories and supporting data.

702 Biological Bases of Behavior (3:3:0). Prereq Open only to degree students. Survey of physiological bases of behavior, incl such topics as neural conduction and role of specific neuro transmitters.

703 Social Bases of Behavior (3:3:0). Prereq Open only to degree students. Survey of social influences on behavior, incl group processes, person perception, and attitude formation.

704 Individual Behavior (3:3:0). Prereq Open only to degree students. A survey of theories and research regarding life-span, human development, and personality formation.

705 Historical and Philosophical Issues in Psychology (3:3:0). Prereq Open only to degree students. Important historical and systematic approaches to psychology and their relationship to the philosophy of science, structure of theory and philosophical issues in psychology.

711 Psychological Assessment (4:3:3). Open only to Psy.D. or M.A. school students. Prereq Open only to degree students. Study of major instruments used in clinical assessment; their nature, problems and predictive value; administration and scoring of the major techniques for evaluation of personality and organicity; principles of interpretation of these procedures.

712 Advanced Adolescent and Adult Assessment (3:3:0). Open only to Psy.D. students. Prereq PSYC 711 and 715 and testing experience in the Psychological Clinic and PoD. Advanced course deals with problems of differential diagnosis of mental disorder.

713 Applied Seminar in Special Topics (3:3:0). Prereq PoD. Issues and problems centering on the application of psychological principles and practices in a specific problem area. Focus on methodologies and techniques derived from psychological principles and on relevant organizational issues that govern applicability of these procedures. May be repeated.

714 Theoretical Seminar in Special Topics (3:3:0). Prereq PoD. Deals in depth with selected issues and problems arising in psychological theory and research. Focus on definitional, historical, philosophical and empirical issues and current attempts to resolve issues. Current research literature is stressed. May be repeated.

715 The Measurement of Intelligence (4:3:3). Open only to Psy.D. or M.A. school students. Prereq PSYC 711 and 715 and 702. Exploring the nature of brain-behavior relationships in adults and children. The course will concentrate on the major assessment techniques in the field. They include Luria Nebraska, Halstead-Reitan and Michigan Neuropsychological batteries.

722 Advanced Child Assessment (4:3:3). Open only to Psy.D. or M.A. school students. Prereq PSYC 711 and 715 and testing experience in the Psychological Clinic. Prereq Open only to degree students. Survey of social influences on behavior, incl group processes, person perception, and attitude formation. Problems involved in diagnostic assessment of children with various handicapping conditions such as brain dysfunction, learning disabilities, retardation and emotional disturbances.
723 Seminar in Experimental Psychopathology (3:3:0). Prereq Po Director of Clinical Training. A seminar in experimental psychopathology that provides a selective review of current topics in psychopathology research literature. The course objective is to understand the methods of study and the empirical literature concerned with basic psychological processes implicated in psychopathology. Topics might incl language and cognition in schizophrenia, autonomic activity and antisocial personality disturbances, and attribution theory and depression.

727 Group and Family Psychotherapy (3:3:0). Prereq Open only to Psy.D. students, PSYC 616 and 775. A review of the major approaches to group and family psychotherapy. Group therapy approaches include the psychoanalytic approaches of Slavson and Ezriel, Yalom's interactionist approach, and Bion's Tavistock model and the encounter approaches of Schultz and Perls. Family therapy approaches include Bowen's systems approach, the communication models of Haley and Satir, Minuchin's structural theory, and Ackerman's psychoanalytic approach.

729 Behavior Therapy Sp (3:3:0). Open only to Psy.D. students. Investigation of specific procedures for altering emotional distress and behavioral dysfunction as they are implemented within the conceptual framework of clinical psychology.

730 Practicum in Applied Psychology (1-6:0:0). Prereq Open only to degree students in Psychology and PoD. Apply for credit in the area coordinator sixty days prior to the beginning of the semester. Practical experience in an organizational setting as assigned. Psy.D. students may repeat this course to a maximum of fifteen hours; M.A. students to a maximum of six hours.

731, 732 Community Psychology: Theory and Practice (3:3:0). Prereq Open only to Psy.D. students. An introduction to the history, concepts and practice of community psychology. Course work and practice will focus on community mental health theory, consultation, prevention, program planning and evaluation and human service management.

740 Seminar in Psychosocial Issues (3:3:0). Prereq Advanced psychology grad or law students, or Pol. Intensive examination of selected aspects of the law-psychology interface. Focus on how psychology contributes to the legal process and how law affects the application of psychology. Students select issues relevant to their career goals, search the literature and present their findings to the class.

750 Psychological Practicum (1-6:0:0). Prereq two assessment courses: PSYC 711, 715 or 786; and testing experience in the Psychological Clinic. Apply (in writing) for PoD sixty days prior to the beginning of the sem. Practical experience in a clinical setting as assigned.

754 Quantitative Methods III: Psychological Applications of Regression Techniques (3:3:0). Prereq PSYC 553. Psychological applications of regression techniques will be reviewed in a variety of contexts including experimental, field, and survey settings.

755 Advanced Analysis of Psychological Data (3:3:0). Prereq PSYC 553, 652 or 653, or equiv. Intro to manipulation techniques of statistical analysis appropriate for applied problems in psychology. Techniques of data checking and cleaning, data manipulation and transformation, and simple and complex statistical analyses as applied to psychological problems are covered in depth with three widely used statistical packages—BMD, SPSS and SOUPAC.

756 Quantitative Methods IV Multivariate Techniques in Psychology (3:3:0). Prereq PSYC 300 or equiv; PSYC 755 strongly rec. Survey of multivariate statistical techniques as applied to psychological research. Emphasizing analysis of complex designs and interpretation of multivariate data analyses resulting from computer processing.

765 School Psychology Internship (3:0:0). Prereq Completion of req courses in school psychology and/or Po program coordinator. One-school-year supervised field experience where the advanced school psychology student functions as a full-time staff member within a school system. Activities incl psychoeducational assessment; consultation with teachers, parents and administrators; and involvement in the complete range of functions req of the school psychologist. Graded pass or fail.

772 Seminar in Behavioral Assessment of Toxic Effects (3:3:0). Prereq grad course in physiological psychology or animal behavior, and a course in drugs and behavior or environmental hazards, or Pol. Intensive intro to methodology of behavioral assessment of adverse drug or chemical effects. In-depth discussion of major research in behavioral toxicology, such as the effects of heavy metals, inhalants, gases, and abused drugs on behavior.

775 Theories of Psychotherapy (3:3:0). Prereq Open only to Psy.D. students and PSYC 616. A review of the major approaches to psychotherapy, including the psychoanalytic, humanistic-existential, and cognitive-behavioral approaches. Students will study individual, group, and family therapy from each of these perspectives.

786 Functional Assessment and Treatment in Gerontology (3:3:0). Prereq A course in the psychology of aging, PSYC 320 and PSYC 423, or equiv courses. Functional assessment of older adults incl the conceptual and methodological problems involved. Intervention strategies with older adults are examined, incl interviewing, group work with older persons, milieu therapy, reality therapy and the design of supportive environments.

790 Seminar in Professional Psychology (1:1:0). Prereq Open only to Psy.D. students. All students are req to enroll for each sem they are in the program. Focuses on the role of psychologists in various work settings. Consideration given to the functions performed by psychologists in those settings, to contributions by psychologists to the overall goals of those settings, to relationships with other professionals, managers and personnel, and to management and policy issues arising in the various settings. Ethical issues addressed.

792 Special Topics in Psychology (3:3:0). Prereq Open only to Psy.D. students. Selected topics reflecting specialized areas in psychology. Content varies. May be repeated.

793 Psychological Assessment Practicum and Supervision (3:0:0). Prereq Open only to Psy.D. students. The course entails the administration, scoring, and interpretation of psychological tests for adults and children in a professional setting under supervision.
794 Psychotherapy Practicum and Supervision (3:0:0). Prereq Successful completion of PSYC 793, open only to Psy.D. students. The course entails the supervised practice of individual psychotherapy with adults in a professional setting.

795 Clinical Externship (3:3:0). Prereq Open only to Psy.D. students in the third year of training. Students are placed in a local mental health facility, where they will have the opportunity to develop their psychodiagnostic and psychotherapy skills under the supervision of a clinical psychologist. Presentation of clinical material at department seminars is also required.

797 Directed Reading and Research (1-3:0:0). Independent reading on a topic agreed to by a student and a faculty member. May be repeated once, except it may not be repeated for degree cr by students who also register for PSYC 799.

798 Practical Research in School Psychology (4:0:0). Prereq req courses in school psychology prog and/or Po program coordinator. Practical project in the school system under the supervision of a faculty member. The student completes a paper on a project and has it approved by adviser and at least one other faculty member. Not available to students enrolled in EDUC 499 or PSYC 799.

799 Thesis (3-6:0:0). Research on approved thesis topic under the direction of a thesis committee with approval of the Chair.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in psychology. Program of studies designed by student’s discipline director and approved by student’s doctoral committee which brings the student to participate in the research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

998 Doctoral Dissertation Proposal (cr. vary). Work on a research proposal which forms the basis for a doctoral dissertation. May be repeated. No more than 24 credit hours of PSYC 998 and 999 may be applied to doctoral degree requirements.

999 Doctoral Dissertation (cr. vary). Research on an approved dissertation topic under the direction of dissertation committee. May be repeated. No more then 24 credit hours of PSYC 998 and 999 may be applied to doctoral degree requirements.

Public Administration

Faculty

Anderson, Wayne F., M.S., University of Wisconsin, Madison, 1949; Distinguished Professor

Brown, Brack, Ph.D., Syracuse University, 1977; Associate Professor

Clark, Robert P., Ph.D., Johns Hopkins University, 1966; Professor

Cole, John D. R., M.A., University of Redlands, 1951; Research Professor

Friedlander, Melvin A., Ph.D., The American University, 1982; Assistant Professor

Gortner, Harold F., Ph.D., Indiana University, 1971; Associate Professor

Knight, Barbara B., Ph.D., The George Washington University, 1971; Associate Professor

Mahler, Julianne G., Ph.D., State University of New York at Buffalo, 1976; Assistant Professor

Nguyen, Hung M., Ph.D., University of Virginia, 1965; Associate Professor

Nicholson, Jeanne B., Ph.D., Johns Hopkins University, 1976; Associate Professor

Ostrowski, John W., Ph.D., Kent State University, 1980; Assistant Professor

Pfiffner, James P., Ph.D., University of Wisconsin, Madison, 1975; Associate Professor

Plant, Jeremy F., Ph.D., University of Virginia, 1975; Associate Professor

Sacco, John F., Ph.D., Pennsylvania State University, 1973; Associate Professor

Sandole, Dennis J.D., Ph.D., University of Strathclyde, 1979; Associate Professor

Stillman, Richard J., II, Ph.D., Syracuse University, 1971; Professor

White, Louise G., Ph.D., The American University, 1974; Associate Professor
Master of Public Administration, M.P.A.

The master of public administration program falls within the Public Affairs Department. The program is designed to increase the students' competence in public service careers by improving their understanding of the processes of management and policy analysis within the public bureaucracy and the public policy system. As the standard professional credential in the public service field, the M.P.A. is designed to serve the career needs of those filling or expecting to assume responsible managerial and staff positions in public service in a wide variety of organizational settings.

The student-to-faculty ratio in the classroom is less than 20 to one. While most courses are taught by a distinguished full-time faculty, part-time instructors who hold advanced degrees and positions of responsibility in the public sector teach some classes. Thus, there is a good balance between theory and practice and this is valuable to everyone in the M.P.A. program.

Admission Requirements

In general, a degree applicant should meet the following minimum admission requirements:

1. A bachelor's degree from an accredited institution (Applications are accepted from the full range of baccalaureate degrees. No application is processed until all official transcripts are received by the GMU Graduate Admissions Office.)

2. A grade-point average of at least 3.00 on a 4.00 scale the last 60 hours of undergraduate work or the major field of study

3. Three letters of recommendation (All letters should assess the applicant's academic and career potentials.)

4. A resume detailing work and civic activities undertaken if the applicant is employed

5. Training certificates or other work-related or post-baccalaureate training information (No credit need be given for this experience, but the information will be used in helping to plan the student's education program.)

6. GRE Aptitude Test scores (Not required of persons who have completed another graduate degree; e.g., master's, J.D.). GMAT or LSAT scores may be substituted for the GRE.

Degree Requirements

The M.P.A. program requires 42 semester hours of graduate course work. In addition, a student must demonstrate proficiency in statistics and either computer science or accounting. A student may demonstrate proficiency in statistics, computer science, and accounting by completing an appropriate course in those subjects. Or, a student may satisfy the M.P.A. faculty that his or her work experience clearly demonstrates proficiency in the appropriate topics. The structure of the program is based on four levels of course work: core courses (18 hours), distributive requirements (6 hours), concentration courses (12 hours), and elective courses (6 hours). Four concentrations—public management, policy analysis, public financial management, and public personnel administration—predominate in the program, but others may be tailored to meet the needs of students with special interests. A concentration in international management will commence in 1985-86.

Courses Outside the Public Administration Program

Courses from another graduate program of this University may be allowed, provided they are from a related field and prior approval is received from the director of the public administration program.

With the approval of the student's adviser, the chair of the Department of Public Affairs and the dean of the Graduate School, graduate credits earned at other accredited colleges or universities may be accepted for transfer. Normally, six hours of graduate credit may be transferred at the time of admission. With prior approval, an additional six hours may be earned at other institutions while enrolled in the program. In a few cases, equivalency credit (six credits maximum) may be granted for training received outside of an academic setting if it can be proved that the training is equal in quality to graduate course work. A maximum of 12 semester hours from all sources (including Extended Studies) will be accepted.

M.P.A. Course Work

All students are required to take six M.P.A. core courses that provide a common body of knowledge about public administration, its political environment, and the special tools required in its study and practice. These courses are:
PUAD 502 Theory and Practice of Public Administration
PUAD 503 The Political Environment of Public Management
PUAD 611 Methods of Analysis for Public Managers I
PUAD 612 Methods of Analysis for Public Managers II
PUAD 615 Administrative Law
PUAD 700 Ethical Dimensions of Public Administration

In order to have an adequate understanding of the major processes involved in public administration, students are expected to take three of the courses introducing the four major concentrations (discussed below) in the M.P.A. program. Students are expected to take the introductory course for their concentration and then select the most appropriate two of the other three. These courses are:

- PUAD 620 Organization Theory and Management Behavior
- PUAD 640 Public Policy Process
- PUAD 660 Public Financial Management
- PUAD 670 Personnel Administration in the Public Sector

Each concentration consists of three courses beyond the introductory course. The major concentrations, with the courses required, are as follows:

- Policy Analysis
  - PUAD 641 Policy Analysis
  - PUAD 642 Program Evaluation
  - PUAD 749 Issues in Public Policy Analysis

- Public Financial Management
  - PUAD 661 Public Budgeting Systems
  - PUAD 662 State and Local Financial Management
  - PUAD 769 Issues in Public Financial Management

- Public Management
  - PUAD 621 Principles and Practices in Government Organization and Management
  - PUAD 622 Program Planning and Implementation
  - PUAD 729 Issues in Public Management

- Public Personnel Administration
  - PUAD 671 Public Employee Labor Relations
  - PUAD 672 Methods in Public Personnel Administration
  - PUAD 779 Issues in Public Personnel Administration

Two elective courses complete the program. Students are encouraged to choose their electives very carefully, building upon their concentrations whenever possible and looking outside the public administration program when appropriate courses are available. A thesis option is available and encouraged as one way of fulfilling the last six hours of the program. An internship is encouraged for preprofessional students.

Doctor of Public Administration, D.P.A.

The goal of the doctor of public administration program is the education of individuals who intend to devote their life's work to public service. Doctoral education, as distinguished from the M.P.A., is characterized by greater depth of inquiry into the basic issues and problems that confront the field of public administration and issues likely to emerge in the future. The D.P.A. curriculum relies on the intellectual traditions of our culture. Its purpose is to contribute to the development of leaders within the field of public affairs who have the intellectual and moral capacity and resiliency to understand, analyze, and influence the art and science of public administration and thus improve the performance and responsiveness of government. To fulfill these goals, the program stresses the development of conceptual and analytical capacities; an understanding of administrative institutions and behavior in a wide variety of social and cultural settings; an appreciation of the basic ethical and substantive questions faced by society; the discernment of future challenges to public administration knowledge and action; the enhancement of administrative and managerial competency; and the development of opportunities for ongoing personal and professional development.

Admission Requirements

While the requirements are stated generally, an applicant should be aware of the fact that the class size each year is limited to no more than 20 participants. Therefore, it is expected that only those individuals with outstanding records and potential will be chosen. Admission to the D.P.A. program depends on the following criteria:

1. An applicant’s previous academic record should demonstrate high intellectual capacity, indicating to the graduate public administration faculty that the applicant is capable of completing the doctoral degree

2. An applicant must have an M.P.A., M.B.A., M.S., M.A., or equivalent post-baccalaureate work at the time of entry into the D.P.A. class (Fall semester of each year)

3. An applicant to the D.P.A. who does not have a
master's degree or equivalent post-baccalaureate work should apply for the M.P.A. program. When these candidates have completed 30 hours toward the M.P.A., their application for the D.P.A. will be considered along with all other applications. If accepted into the D.P.A. program, the participant will be awarded the M.P.A. upon completion of the core seminar (PUAD 801-802).

Application For Admission

An individual interested in applying for admission to the D.P.A. program should obtain an application from the Admissions Office. The applicant must arrange to have the following items submitted to the Admissions Office:

1. Completed application and a $15 nonreturnable fee
2. Official transcripts from each college/university where course work has been completed (undergraduate and graduate), which must be transmitted to GMU directly from the institution attended
3. Certification from instructional institutions attended other than colleges and universities (No academic credit need be given for such courses; however, the information will be considered as part of the total individual profile for admission.)
4. Scores from the GRE Aptitude Test, GMAT, or LSAT
5. Three letters of reference
6. A detailed resume (not the SF171) including information on all work, civic activities and interests
7. An essay of 1,500 to 2,000 words that describes how the applicant believes the D.P.A. program at GMU can help in the achievement of stated intellectual and professional objectives.

Applications, including all supporting materials, must be received by the Graduate Admissions Office no later than April 1 to be considered for the annual D.P.A. class to be admitted for the following Fall semester, or November 1 for the Spring.

Degree Requirements

The D.P.A. program requires 90 semester hours of work beyond the baccalaureate degree. A participant must show proficiency in two analytic managerial tools before being advanced to candidacy. Although all participants admitted to the D.P.A. program must have the equivalent of a master's degree, they must take at least 36 hours of course work (the core seminars, intensive seminars, and work spelled out in their individual education plans) and pass two comprehensive examinations before being advanced to candidacy. A dissertation is required, and it must be defended in an oral examination. These and other requirements for the D.P.A. degree are described below.

Residency

A participant in the D.P.A. program must establish academic residency at GMU before being advanced to candidacy. Residency is established by:

1. Participating in the introductory seminar held prior to the Fall semester
2. Completion of the core curriculum, two six-hour seminars taken consecutively during the first two semesters of the D.P.A. program
3. Passing the core comprehensive examination given after the completion of the core curriculum
4. Successful completion of at least six hours of intensive seminars (including the Introductory Doctoral Program Seminar).

Analytical Managerial Tools Proficiency

In order to satisfy the analytic and managerial tools component of the D.P.A. degree, two sets of requirements must be met. First, a participant must demonstrate a working knowledge of the principal research and management tools applicable to public administration. This includes:

1. Successfully completing a graduate course and an intensive seminar in the logic of research
2. Showing knowledge of basic statistical methods (descriptive statistics, probability, sampling, hypothesis testing, and correlation-regression)
3. Showing knowledge of advanced analytical methods (microeconomics, decision analysis, systems theory, and modeling), which may be done by taking PUAD 612 or by passing the course's final exam.

Second, a participant must demonstrate competence in those research and management methods related to the dissertation topic by successfully defending the dissertation proposal.
A participant in the D.P.A. program should normally complete the core seminars during the first full year of study and must participate in six credits of intensive seminars (the pre-entry seminar plus seminars totaling four additional credits). After completing the core seminars, a D.P.A. participant may focus on one of several broadly defined areas. This part of the doctoral program is detailed in the education plan of each participant prepared during the required introductory seminar. The plan for the special area of study is periodically updated as the participant proceeds through the program. This plan must be worked out jointly between the participants and their adviser, once established, the advisory committees. The plan is reviewable by the graduate public administration faculty, which retains ultimate authority in such matters.

The following matrix is intended as a vehicle to provide structure to a participant’s education plan while also allowing maximum flexibility. The cells of the matrix are not considered to be mutually exclusive nor are the activities and perspectives exhaustive. Instead, the intersections of activities and perspectives are intended to be used as focal points around which participants construct their individual education plans.

Although participants may take the majority of work in one part of the matrix and may detail the issues, activities, and perspectives that are central to their goals for the D.P.A., participants are responsible for the broader set of activities and perspectives represented by the other cells that are vertical and horizontal to the one chosen as the focus of attention. This six-cell configuration forms the basis of the special area of study comprehensive examination.

It is expected that students will take course work in those cells that are vertical and horizontal to the main focus of attention in order to successfully complete the special area of study comprehensive. However, the amount and type of course work required in the other cells is to be detailed in each participant’s education plan.

The matrix serves not only as a guide to D.P.A. participants and their advisory committees, but it is used as a framework for designing course content by the D.P.A. faculty. Therefore, the seminars and tutorials of the D.P.A. program focus on selected issues represented within the matrix even though the courses relating to each individual cell may deal with a variety of theoretical, procedural, and substantive materials. By establishing direction and parameters for both faculty and participants, the special area of study allows maximum flexibility and at the same time guarantees a commonality and consistency of intellectual experience.

Model for Special Areas of Study Portion of D.P.A. Program at George Mason University

<table>
<thead>
<tr>
<th>Activities</th>
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<tbody>
<tr>
<td>Analysis and Evaluation</td>
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<tr>
<td>Leadership</td>
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<td>Change and Innovation</td>
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<tr>
<td>Perspectives</td>
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<td>Individual Perspective</td>
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<tr>
<td>Organizational and Interorganizational</td>
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<tr>
<td>Perspective</td>
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<tr>
<td>Societal and Environmental Perspective</td>
</tr>
</tbody>
</table>

(Additional information concerning this model is available from the Department of Public Affairs.)

Work at other universities must be approved by the dean of the Graduate School on the recommendation of the director of the Public Administration Program. No more than six hours of work from other universities taken subsequent to the D.P.A. core seminars can be counted toward the degree.

Doctoral Examinations

A participant in the D.P.A. program must complete the following three doctoral examinations:

1. Core comprehensive examination. Upon completion of the two core seminars, a participant must pass a written comprehensive examination covering the material included in the core of the program.

2. Special area of study comprehensive examination. Upon completion of the special area of study, the participant must complete a written examination as the final step in advancing to candidacy.

3. Oral defense of dissertation. A candidate must defend his research in a presentation to the graduate faculty.
Advancement To Candidacy

A participant is advanced to candidacy for the D.P.A. after establishing proficiency in the analytic and managerial tools, completing the required course work as specified in the core and intensive seminars and in the plan for the special area of study and passing the two comprehensive examinations.

Dissertation

Each doctoral candidate must present a dissertation on some subject connected with the special area of study. The dissertation must represent technical mastery of the subject, originality in research, independent thinking and scholarly ability. Its conclusions must be logical, its literary form must be acceptable, and its contribution to knowledge must be recognizable to others in the field.

Government and Politics Courses (GOVT)

536 The Context of Development (3:3:0). Prereq grad standing or PoD. Internal and external factors and forces, that affect the political development of Third World countries, incl North-South relations, dependence theory, and development strategy within the context of resource scarcity.

537 Selected Problems of Third World Development (3:3:0). Prereq grad standing or PoD. Third World development problems, incl development management, a new international economic order, foreign aid, multi-national corporations and international organizations. May be repeated with PoD.

Public Affairs Course (PUAF)

850 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in public affairs. Program of studies designed by student's discipline director and approved by student's doctoral committee which allows the student to participate in the research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

Public Administration Courses (PUAD)

502 Theory and Practice of Public Administration (3:3:0). Prereq grad standing or PoD. Survey and review of the field of public administration to incl development of U.S. governmental administration, theories of administrative organization and behavior, administrative processes, management of people and money, administrative responsibility, and the public policy-making/public policy-implementation nexus.

503 The Political Environment of Public Management (3:3:0). Prereq grad standing or PoD. Skills involved in a public manager's interaction with private groups, legislative bodies, advisory committees, the press, other administrative agencies, political executives and other levels of government. Case studies of administrative participation in the political process of public policy making.

611 Methods of Analysis for Public Managers I (3:3:0). Techniques and skills available to, and used by, public managers to solve policy-related problems or to analyze policy-related data. Focus on problem definition, research design, and problem solving under conditions of uncertainty in the public sector.

612 Methods of Analysis for Public Managers II (3:3:0). Prereq PUAD 611. Techniques and skills available to, and used by, public managers to solve policy-related problems or to analyze policy-related data. Focus on data gathering and analysis, use of computers, systems theory and analysis, and operations research.


620 Organization Theory and Management Behavior (3:3:0). Consideration of behavior within the context of public organization and the consequent changes req in management. Focus on such issues as perception, attitude formation, motivation, leadership, systems theory, communication and information flow, conflict theory, and decision theory.


640 Public Policy Process (3:3:0). Processes of making public policy, incl detection of public issues, consideration of alternatives, and adoption and implementation of solutions. Highlights the major actors in the policy process, as well as the environment within which they work.

641 Policy Analysis (3:3:0). Prereq PUAD 611. Substantive issues in the conceptualization and practical applications of policy science and other formal perspectives to policy articulation, program formulation and program evaluation in the public sector.

642 Program Evaluation (3:3:0). Prereq PUAD 611. Practical exploration of assessment techniques utilized by central
analytical units in government, incl program impact and program strategy evaluations, cost analysis, field experiments, productivity studies and evaluation research.

650 Intergovernmental Relations in the United States (3:3:0). In-depth study of intergovernmental relations, with emphasis on contemporary patterns of fiscal relations and operational grant programs.

651 Administration in the Commonwealth of Virginia (3:3:0). Cultural, demographic, constitutional and socioeconomic environment of public administration in VA. Governmental agencies, legislative functions, executive leadership, staff agencies, state-local relationships, intrastate regionalism and administrative customs peculiar to VA.

660 Public Financial Management (3:3:0). Analysis of revenue forecasting, revenue strategy, impact of inflation, interest rates, taxation, accounting, budgeting, "back door" spending, pension funding, user charges and other aspects of governmental finance.


662 State and Local Financial Management (3:3:0). Prereq PUAD 660 or PoD. Systems of public finance at state level. Impact of budgetary systems and taxation on state government, impact of federal grants-in-aid, revenue sources, and the relationship of national, state and local jurisdictions as partners in a federal system. Program auditing and new budgetary techniques are examined for their applicability at the state level.


671 Public Employee Labor Relations (3:3:0). Prereq PUAD 670, or PoD. Public employee labor relations, incl unionization, representational elections, bilateral policy negotiations, administration of agreements, management rights, union and membership security, the strike issue and grievance procedures, impact on public administration, and assessment of future developments.

672 Methods in Public Personnel Management (3:3:0). Prereq PUAD 670. Intro to some of the more important basic methods used in public personnel management and administration, incl workforce planning and analysis; job evaluation and compensation; examining and selection; workforce management; and training and development.

700 Ethical Dimensions of Public Administration (3:3:0). Prereq Final sem. of a student's M.P.A. program. Topics of ethical dimensions incl constitutionalism, democratic values and traditions, standards of conduct and ethics, and conflicting values of public officials and social equity of public programs.


759 Issues in Local Government Administration (3:3:0). Contemporary problems—such as land use, transportation, economic development, growth management, and environmental impact—in the management of counties, cities, towns and special districts, with emphasis on local government in VA.


779 Issues in Public Personnel Administration (3:3:0). Prereq PUAD 670 or PoD. Major current issues in public personnel administration and optional ways of dealing with them, with special attention to their relationship to and impact on fundamental principles and values relevant to public personnel management.

794 Internship (2-3:0:0). Prereq Open to authorized grad majors only, contact the department one sem prior to enrollment. Internships are work-study programs with specific employers. Cr is determined by the department.

795 Research Design (3:0:0). Prereq PUAD 612 and at least 12 hr of approved grad cr and completion of proficiency tools. Review of project-related background material. The research design must incl a statement of purpose, identification of data sources, data collection strategies, possible alternate hypotheses to be tested, the framework of analysis and a statement of anticipated results.

796 Directed Readings and Research (3:0:0). Prereq Po prog dir and Pol. Reading and research on a specific topic under the direction of a faculty member. Written report req; oral examination over the research and report may be req. May be repeated once.

798 Research Project (3:0:0). Prereq PUAD 795 and PoD. Completion of an original research project related to public sector administration. On the basis of the approved research design each student prepares and defends a final report that is the result of the research project. Final report must be approved by the Department of Public Affairs.

800 Introductory Doctoral Program Seminar (2:2:0). Prereq PoD accepted in DPA Prog. Intensive orientation, self-appraisal and planning seminar for individuals entering the D.P.A. prog.

of public administrative actions. Req of D.P.A. students during the first year of study.

803 Doctoral Seminar in Issues in Public Administration (1-2:0:0). Prereq PUAD 800. Major programmatic, functional, or operational aspects of public administration, and the principal historical, current, and prospective issues of concern to the field. Learning design entails formation of small teams for fact-finding, analysis, and presentation on important issue areas, as well as full-group sessions. The intensive format schedule is followed. May be repeated.

804 Conduct of Social Inquiry (3:2:0). Prereq PUAD 800. Emphasizes the assumptions and logic of different research designs and data collection techniques and research as an exercise in theory building. Designed to enable candidates to do original research and to critique the research of others.

810 Doctoral Seminar in Change, Innovation and Public Administration (3:2:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Recognition, anticipation, and analysis of economic, political, social, and technological change as it influences and is influenced by public administration. Nature of change, innovation, and creativity in society with the object of enhancing student sensitivity to and knowledge about the future. Ways for designing the structures and procedures of public organization so they can adapt to change.

819 Doctoral Tutorial in Change, Innovation, and Public Administration (1-3:0:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Individualized, intensive study of particular features of change, innovation, and public administration. Study arranged and supervised with tutorial professor.

820 Doctoral Seminar in Leadership (3:3:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Leadership in the political and administrative world, with special emphasis on the leader's social influence, intellectual guidance, and on the leader's role in policy making and organizational creation and direction. Inquiry is also made into the effect of internal and external forces upon leadership styles and effectiveness.

821 Doctoral Seminar in Theories of Organization and Bureaucracy (3:3:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. The examination of key issues in organization theory and behavior. Issues include organization design, interorganizational coordination, intelligence and decision-making systems, leadership and motivation theories, and theories of organizations as agents of political and social change. Case studies will be used.

829 Doctoral Tutorial in Leadership (1-3:0:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Individualized, intensive study of particular features of leadership. Study is arranged and supervised with the appropriate tutorial professor.

840 Doctoral Seminar in Analysis and Evaluation (3:3:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Quantitative and qualitative approaches and techniques used in recognizing, defining, and assessing public issues and problems. Conceptualizing and assessing problems, employing and judging the strengths and weaknesses of tools and techniques, and identifying and categorizing the information required for competent analysis and evaluation.

849 Doctoral Tutorial in Analysis and Evaluation (1-3:0:0). Prereq Pol and PoA; doctoral students from other programs may enroll only by Pol. Individualized, intensive study of particular features of analysis and evaluation. Study is arranged and supervised with the tutorial professor.

999 Doctoral Dissertation (18-24). To be taken only with Po and participant's dissertation committee. Registration for the total cr hr may be spread over a multi-sem contiguous period. D.P.A. candidates must register for at least 3 hr each sem until completion of the dissertation.
Sociology

Faculty

Avruch, Kevin A., Ph.D., University of California at San Diego, 1978; Associate Professor

Black, Peter W., Ph.D., University of California at San Diego, 1977; Associate Professor

Borkman, Thomasina S., Ph.D., Columbia University, 1969; Associate Professor

Dietz, Thomas M., Ph.D., University of California at Davis, 1979; Assistant Professor

Gittler, Joseph B., Ph.D., University of Chicago, 1941; Visiting Professor

Golomb, Louis, Ph.D., Stanford University, 1976; Assistant Professor

Hickey, Anthony A., Ph.D., Cornell University, 1975; Associate Professor

Horton, Lois E., Ph.D., Brandeis University, 1977; Assistant Professor

Kolker, Aliza, Ph.D., Columbia University, 1975; Associate Professor

Krech, Shepard, Ph.D., Harvard University, 1974; Associate Professor

Palkovich, Ann M., Ph.D., Northwestern University, 1978; Assistant Professor

Rader, Victoria F., Ph.D., University of Chicago, 1973; Associate Professor

Rosenblum, Karen E., Ph.D., University of Colorado, 1979; Assistant Professor

Schlueter, Gregory, Ph.D., Southern Illinois University, 1981; Assistant Professor

Scimecca, Joseph A., Ph.D., New York University, 1972; Professor

Tavani, Nicholas J., Ph.D., University of Maryland, 1969; Associate Professor

Williams, Thomas R., Ph.D., Syracuse University, 1956; Professor

Sociology, M.A.

The Department of Sociology and Anthropology offers a master's degree in sociology. A student may choose a concentration in either general sociology or applied sociology. The general sociology concentration allows maximum flexibility in the application of sociological knowledge to the analysis of social processes and systems. The applied concentration serves as a professional degree for the practitioner. Both are appropriate for those anticipating further graduate study leading to the Ph.D. in sociology. The department provides opportunities for students to develop expertise in a variety of areas, including: applied methods, community, conflict management, criminology and juvenile delinquency, development and social change, deviance, environmental sociology, gerontology, medical sociology, occupations and professions, policy analysis, race and ethnicity, sex and gender, and survey research.

Admission Requirements

In general, a degree applicant should meet the following admission requirements:

1. A bachelor's degree from an accredited institution

2. An undergraduate grade point average of 3.00 (on a 4.00 scale)

3. A GRE score of at least 1000

4. A minimum of three semester hours each in undergraduate sociological theory, statistics and research methods. Equivalent courses in other disciplines may be substituted for some of these requirements with permission.

5. Three letters of recommendation.

Acceptance of applicants to the program will depend upon assessment by the departmental graduate committee.

Provisional Admission

All required documentation for degree status must be submitted. An applicant with an undergraduate GPA of less than 3.00 who meets the other requirements may be admitted on a provisional basis. After completing not less than 6 nor more than 12 semester hours of graduate work with a grade point average of 3.00 or better, a provisional student may apply for degree status. If upon the
completion of 12 hours a 3.00 average has not been achieved, provisional enrollment will be terminated.

Non-Degree Status

Students who do not wish to pursue a degree, or who have not supplied all required documents, may be admitted to nondegree status. Nondegree students may later apply for degree status. With approval, a maximum of 12 graduate credit hours earned in nondegree status may be applied to a master's degree.

Degree Requirements

General Sociology. The degree requires 33 semester hours, including a core of 6 hours of social theory (Sociology 611, 612) and 6 hours of research methods (Sociology 620, 630). Students are also required to complete a master's thesis or equivalent.

Applied Sociology. The degree requires 33 semester hours, including a core of 3 hours of social theory (Sociology 612), 6 hours of research methods (Sociology 620, 630), and 9 hours of applied sociology (Sociology 515, 632, 640). Students are also required to complete a master's thesis or equivalent.

The Master's Thesis

A master's thesis or equivalent, such as a research report, will be required for the M.A. degree in sociology to demonstrate a candidate's capacity to carry out independent research. The thesis or its equivalent will consist of a substantial sociological research or theoretical project that will contribute to sociological knowledge. Candidates are encouraged to conduct replications of sociological studies for their master's project. Original research or theoretical contributions are also appropriate.

A traditional master's thesis is similar in format but is a scaled-down version of a Ph.D. dissertation. The thesis equivalent for the applied concentration may be a research report appropriate for submission to an agency. The quantity and quality of theoretical or research work would be the same for the thesis or the research report.

Financial Aid

The Department of Sociology/Anthropology has a limited number of graduate assistantships. For information, please contact the department at 323-2900.

Sociology Courses (SOCI)

503 Family Law (3:3:0). Prereq undergrad senior status in Sociology, grad stdg or Pol. An examination of the salient aspects of the law as it affects the family in our dynamic society. Topics include: the nature and formalities of the marital relationship, intra-family torts and crimes, termination of the marital relationship, child custody and support, adoption, separation agreements, and the economic and sociological aspects of marriage, separation, and divorce.

515 Applying Sociology (3:3:0). Prereq undergrad senior status in sociology, grad status. Course provides overview of the ways sociologists have applied their theoretical and methodological skills and understanding in sociological practice in nonacademic settings.

541 Survey Research (3:3:0). Prereq PSYC 300 or SOCI 221 or equiv. This course is designed to acquaint students with the theory, method, and practice of survey research design and analysis. The course requires the student to complete a survey research project.

599 Issues in Sociology (3:3:0). Prereq undergrad senior status in sociology; grad status. Course provides an opportunity to explore topics of contemporary interest in sociology. Topics will change from one semester to the next and will include issues in sociological theory, crime and delinquency, advanced research methods, social and cultural change, urban sociology, medical sociology, sociology of aging, rural sociology. This course can be taken only once for credit.

602 Sociology of Formal Organizations (3:3:0). Prereq grad stdg or Pol. Classical and contemporary theories governing formal organization, and issues such as nature of authority, implementation of change, and relationship between formal organization and society.

604 Sociology of Occupations and Professions (3:3:0). Prereq grad stdg or Pol. Theories of occupations and professions. Issues include educational patterns and social mobility, occupational status and prestige, importance of the work setting, work satisfaction and alienation, and impact of the professions on society.

606 Socialization Processes (3:3:0). Prereq grad stdg or Pol. Selected aspects of the cultural transmission process in specific local cultures selected from various world culture regions—e.g., Oceanic, Sub-Saharan Africa, India—with an emphasis on the origins, course of development, and present structure and functions of the intergenerational transmission of culture.

607 Criminology (3:3:0). Prereq grad stdg or Pol. Crime and crime causation. Topics include social basis of law, administration of justice, and control and prevention of crime.

608 (508) Juvenile Delinquency (3:3:0). Prereq grad stdg or Pol. Sociology of adolescent behavior. Sociological factors that determine which behaviors and social categories of adolescents are likely to be labeled and treated as delinquent.

609 Corrections (3:3:0). Prereq grad stdg or Pol. Critical assessment of American adult and juvenile correctional
systems. In-depth analysis of current American correctional ideology of punishment and incapacitation. Alternative models will be advanced which stress community-based, community-controlled programming.

610 Qualitative Research Methods (3:3:0). Prereq grad stdg or Pol. Examination of basic research methods involving observational techniques and procedures used in describing and analyzing the patterns, configurations, ethos, values, structures, functions, and styles typical of whole societies and cultures, with an emphasis on case studies, unobtrusive methods, participant observation, long-term residence, choices of observer status-role, recording data, uses of technical equipment, key informants, interviewing techniques, and ethical considerations in employing such methods and procedures.

611 Classical Sociological Theory (3:3:0). Prereq grad stdg or Pol. In-depth examination of major issues in classical (pre-1930) sociological theory. Durkheim, Marx, Weber, Mead and others are analyzed and the social and intellectual context of their theories is emphasized.

612 Contemporary Sociological Theory (3:3:0). Prereq grad stdg or Pol. Schools in contemporary sociological theory such as structural-functionalism, conflict, exchange, symbolic interactionism, ethnomethodology, humanist sociology and critical theory are examined. Contemporary theorists are analyzed in relation to the schools.

615 Social and Cultural Change (3:3:0). Prereq grad stdg in sociology or Pol. Social and cultural change in a transnational and transcultural (or comparative) perspective, with particular attention to theories, research methods, and conclusions concerning development and modernization in post-Colonial and "Third World" societies and cultures.

616 Society, Culture, and Personal Character (3:3:0). Prereq grad stdg in sociology or Pol. Transcultural (comparative) examination of the interrelations between social and cultural factors and individual personal character; focus on life history of individuals in particular social and cultural settings. Readings and discussions center upon theoretical concerns, methodological approaches, and current research in study of social/cultural factors in personal character.

620 Design of Social Research (3:3:0). Prereq grad stdg and undergrad statistics and research methodology, or Pol. Intro to advanced strategies of social research used in the area of social policy analysis, inc sample design, theory and techniques of measurement, questionnaire design, and data collection. Incl an intro to various types of social research: survey, participant observation, case study, and evaluation research.

621 Human Ecology and the City (3:3:0). Prereq grad stdg or Pol. Intro to urban ecology. Origin and development of various types of cities, shape and structure of urban areas, inner and outer city, and spatial patterning of urban institutions.

622 Metropolitan and Regional Development (3:3:0). Prereq grad stdg or Pol. Process of social development in the context of metropolitan and regional social change. Social development is considered in the light of economic, political, demographic, and human resource dimensions.

623 The Suburban Community (3:3:0). Prereq grad stdg or Pol. Systematic sociological study of the suburb: (a) its evolution and development (demographic and geographic); (b) its varied types; (c) its relation to the inner city; (d) as part of the metropolitan area and megalopolis; (e) its structure as a community incl its formal and informal social groupings, organization and voluntary associations, family and social institutions, social stratification, and social mobility; (f) social change.

630 Analytic Techniques of Social Research (3:3:0). Prereq grad stdg and undergrad statistics and research methodology, or Pol. Advanced strategies of social research used in the area of social policy analysis, focusing on analytic techniques such as analysis of variance and covariance, time series regression, path analysis and elaborative contingency table analysis.

632 Evaluation Research for Social Programs (3:3:0). Prereq SOCI 520, 530, or Pol. Study of methodological issues related to the evaluation of social programs. Conceptual and research design issues are explored in relation to social programs, particularly the delivery of social services. To incl the examination of methods used to assess the need for the programs, impact of delivery systems, and the efficiency and effectiveness of social programs.

633 Special Topics in Sociology (3:3:0). Prereq grad stdg or Pol.

640 Social Theory and Social Policy (3:3:0). Prereq grad stdg or Pol. Major theories of social organization and social change as a means of understanding social policy development. Concentration is on social policies in American society.

650 Health Systems Delivery (3:3:0). Prereq grad stdg or Pol. An analysis of the social factors associated with the delivery of health care. Several theoretical perspectives are used to highlight relevant elements. Planning for health from individual to federal processes is studied. The processes and problems of measuring the quality of health care are investigated.

651 (551) Medical Sociology (3:3:0). Prereq grad stdg or Pol. Social context of disease and medical care, the position of the professions in the medical care structure, the delivery of medical care, and the physician-patient relationship under different systems of practice.

680 Clinical Sociology (3:3:0). Prereq grad stdg or Pol. Intro to theoretical principles, methods and procedures necessary to practice clinical sociology as an independent consultant or within private or public organizations. Such specialized applications as family counseling, organizational change, medical sociology and educational sociology are covered. 685 Sociology of the Disabled (3:3:0). Prereq grad stdg or Pol. Overview of social movements relating to the disabled incl questions on how persons with handicaps manage living in their homes, schools, and workplace. Analysis of legislation and public programs as they relate to various disabling conditions.

686 Sociology of Aging (3:3:0). Prereq grad stdg or Pol. Analysis of sociological issues in aging. Issues incl class and cultural factors, problems of work, of retirement, of attachment and of loss and ageism. Different theories of aging are examined.
696-697 Independent Study (3:0:0), (3:0:0). Prereq grad stdg or Pol. Theoretical and research literature chosen by student and instructor.

799 Thesis (3-6:0:0)

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in sociology. Program of studies designed by student’s discipline director and approved by student’s doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

Systems Engineering

696-697 Independent Study (3:0:0), (3:0:0). Prereq grad stdg or Pol. Theoretical and research literature chosen by student and instructor.

799 Thesis (3-6:0:0)

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in sociology. Program of studies designed by student’s discipline director and approved by student’s doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

Faculty

Bolstein, A. Richard, Ph.D., Purdue University, 1967; Associate Professor

Gantz, Donald T., Ph.D., University of Rochester, 1974; Associate Professor

Goicoechea, Ambrose, Ph.D., University of Arizona, 1977; Associate Professor

Greenberg, Irwin, Eng.Sc.D., New York University, 1964; Professor

Hoffman, Karla L., Sc.D., The George Washington University, 1975; Associate Professor

Jo, Kyung Y., Ph.D., North Carolina State University, 1982; Assistant Professor

Miller, John J., Ph.D., Stanford University, 1974; Associate Professor

Mohamed, Fouad Y., Ph.D., Florida State University, 1981; Assistant Professor

Paik, Minja K., Ph.D., University of California, 1971; Assistant Professor

Roque, Diego, Sc.D., The George Washington University, 1982; Assistant Professor

Sage, Andrew P., Ph.D., Purdue University, 1960; First American Professor of Information Technology

Sofer, Ariela, Sc.D., The George Washington University, 1984; Assistant Professor

Operations Research and Management Science, M.S.

The master of science in operations research and management science is Operations Research and Management Science, M.S. offered in the Graduate School by the Systems Engineering department. The program contains five core courses (Operations Research I, II, Applied Statistics, Computer Simulation, Seminar in Management Science) which provide the student with a comprehensive understanding of the basic techniques and applications of OR/MS. A student then selects three additional methodology courses in operations research, one in applied statistics and two applications courses from a large number of offerings to complete the thirty-three hour program. All of the courses are currently being offered and a
Degree Programs

A student may take courses this year to apply towards the degree. This program adds to the currently offered M.B.A. with concentration in management science, the M.S. in mathematics with concentration in operations research and the M.S. in mathematics with concentration in statistics.

Students may avail themselves of course opportunities through the Cooperative Graduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree Program. Refer to section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Admissions Requirements

To be admitted to the program, a candidate must:

1. Fulfill all admission requirements of the Graduate School
2. Hold a baccalaureate degree and have taken the following courses or their equivalents:
   - MATH 113, 114, 213: Calculus, including calculus of several variables
   - MATH 351: Probability
   - MATH 303 or 322: Matrix Algebra or Linear Algebra
   - ECON 103: Microeconomics
3. Have a knowledge of at least one scientific computer programming language; and
4. Have three letters or recommendation submitted by former professors or supervisors.

A student with deficiencies in preparation may be accepted provisionally pending removal of the deficiencies. Courses taken to remove admission deficiencies cannot be counted toward the degree.

Degree Requirements

The program consists of 33 credits, divided as follows. The core curriculum will consist of the following five courses (15 credits):
- OR 535 Computer Simulation
- OR 541 Operations Research I
- OR 542 Operations Research II
- OR 743 Seminar in Applications of Management Science
- STAT 654 Applied Statistics

One additional statistics course (three credits) must be chosen from those with a "STAT" designation numbered above 651.

Three additional 600-level methodology courses (nine credits) designated "OR" must be chosen.

The following are also acceptable as methodology courses:
- MATH 681, 682 Systems Optimization and Control
- SYST 661 Systems Engineering—Models and Control
- SYST 675 Reliability

Two additional application courses (six credits) must be chosen with the concurrence of the student's adviser. These courses will be drawn from various fields such as Business Administration, Computer Science, Economics, Public Administration, and Systems Engineering.

With the permission of their advisers, qualified students may elect to write a thesis in place of three credits of course work from the methodological or applications area.

Systems Engineering, M.S.

The master of science in systems engineering is designed to train graduate students to analyze, model and design complex systems such as those encountered in the public and private sectors. They may include energy systems, health care delivery systems, weapon systems, communication systems, transportation systems, environmental systems and industrial systems.

To achieve this objective, the proposed program was developed to include core courses, specialty courses and general electives. To obtain the master of science degree, the student is required to take a total of 30 hours, including a thesis or research project.

Students may avail themselves of course opportunities through the Cooperative Graduate Engineering Program, in affiliation with the University of Virginia and Virginia Tech. Appropriate courses may be transferred, with adviser approval, into this GMU Degree Program. Refer to section on "Certificates, Programs, and Additional Graduate Courses" in this catalog.

Admission Requirements

In addition to Graduate School general admission requirements, the admission requirements for this program are:

1. A degree in engineering, physical sciences, or related field which implies that the applicant has
successfully completed foundation courses in the following areas:
(a) Calculus through differential equations, (b) two semesters of applied probability and statistics, (c) one semester of engineering economy, and (d) a scientific programming language. Courses taken to make up for deficiencies in the undergraduate preparation cannot be counted towards the degree requirements.

2. Three letters of recommendation. Acceptance to the degree program will be based on an assessment of the capacity of the applicant to pursue the graduate program based on factors such as the undergraduate record and professional work experience. Although the Graduate Record Examination (GRE) is not required at present, past test results will be used as an additional measurement of the applicant's qualifications. Students from non-English speaking countries are required to demonstrate proficiency in English via the TOEFL Exam, achieving a score of 550 or higher. For additional details concerning admission, please contact the Admissions Office (703-323-2100).

Degree Requirements
To obtain a master of science in Systems Engineering, a total of 30 hours are required. The candidates for the degree must successfully complete these requirements as follows:

1. Five core courses (15 hours);
2. Option A—SYST 798, Master’s Research Project (3 hours), plus four graduate-level courses (12 hours) of approved electives.
3. Option B—SYST 799, Master’s Thesis Research (6 hours), plus three graduate-level courses (9 hours) of approved electives.

The Master’s Research Project is designed to permit the student to conduct research under the guidance and approval of a faculty adviser. In some cases, permission may be granted to complete the work itself at the student’s place of employment. The final product of the work is to be a technical research report which is approved by the adviser. The Master’s Research Project (SYST 798) is expected to be finished in one semester. In extenuating circumstances, the course may be repeated once to complete the project; however, only 3 credits may be applied toward the degree.

The second option requires a Master’s thesis which involves a more significant research effort. The work is to be conducted under the guidance of a faculty adviser, and the final written thesis and oral defense are to be approved by a three-member faculty committee and the Dean of the Graduate School. The thesis work is expected to be completed while taking SYST 799, Master’s Thesis Research, only twice. In no case may the course SYST 799 be taken more than four times, and only six credits of it may be applied toward the degree.

Sample Curriculum
Core Courses (15 credits)
OR 541 Operations Research I
OR 542 Operations Research II
SYST 660 Systems Engineering—Economic Analysis
SYST 661 Systems Engineering—Models and Control
STAT 655 Analysis of Variance or STAT 656 Regression Analysis
Electives—Choose Three or Four (9 or 12 credits)
With the approval of his/her adviser a student will select a set of electives that is pertinent to his/her field of interest. In general electives will be selected from those graduate offerings with the designations CS, ENGR, OR, STAT, and SYST for which the student has the proper prerequisites. Selected courses with DESC, INFS, MATH, PHYS, and PSYC designations can also be used.

Of particular interest to students planning to go on to the Ph.D. program in Information Technology is the following set of electives:
ENGR 542 Computer Network Architecture and Protocols
ENGR 580 Signals and Systems
CS 571 Operating Systems
CS 583 Data Structures and Analysis of Algorithms

These courses, along with the core, encompass the material upon which the "breadth" portion of the doctoral comprehensive examination is based.

Some other representative elective areas include:
Human Factors: IRM 760, PSYC 530, PSYC 634, STAT 655 or 656.
Decision Support: CS 580, OR 535, OR 744, STAT 658.
Manufacturing Systems: DESC 563, ENGR 650, OR 648, SYST 675.
Reliability and Quality Control: STAT 655 or 656, STAT 657, SYST 570, SYST 675.

Projects (3 credits) or Thesis (6 credits)
Operations Research Courses (OR)

535 (formerly BUAD 535) Computer Simulation (3:3:0).
Prereq IRM 610 (formerly BUAD 630) and DESC 611, or undergrad equiv. Computer simulation as a scientific methodology in corporate planning and operations analysis emphasizing model development, implementation, and analysis of results. Project, lecture, and lab. Fall.

540 (formerly BUAD 742) Management Science (3:3:0).
Prereq DESC 611 (formerly BUAD 641). Operations research techniques and application to managerial decision making. Computer simulation, Markov processes, queueing theory, inventory models, PERT and CPM, mathematical programming. Research, lecture, and lab. Fall.

541 Operations Research I (3:3:0).
Prereq MATH 303 or equiv. Deterministic methods for solving "real-world" decision problems. The linear programming model and simplex method of solution, duality and sensitivity analysis, transportation and assignment problems, shortest path and maximal flow problems, project networks including PERT and CPM, intro to integer and nonlinear programming and game theory. Emphasis on modeling and problem solving. Students who have taken MATH 441 or 443 will not receive cr.

542 Operations Research II (3:3:0).
Prereq MATH 351 or equiv. Probabilistic methods for solving "real-world" decision problems. Probability review, queueing theory, inventory theory, Markov decision processes, reliability, decision theory, simulation. Emphasis on modeling and problem solving. Students who have taken MATH 442 will not receive cr.

641 Linear Programming and Network Flows (3:3:0).
Prereq OR 541 or Pol. Topics incl large scale decomposition, special forms of the simplex method, goal programming; network problems incl minimal cost flow, matching and covering, branching, postman, location and traveling salesman problems.

642 Integer Programming (3:3:0).
Prereq OR 641 or Pol. Cutting plane and enumeration algorithms for solution of integer linear programs; Knapsack problem, matching problem, set covering and partitioning problems; applications to problems in the management sciences, such as capital budgeting, facility location, political redistricting and scheduling.

644 Nonlinear Programming (3:3:0).
Prereq MATH 675 and knowledge of a scientific programming language or Pol. Nonlinear programming. Optimization techniques applicable to the most frequently occurring mathematical models in the field of engineering, economics, operations research and management science. Unconstrained optimization by search techniques, descent methods and conjugate directions. Constrained optimization by a transformation to unconstrained problems and techniques which deal with the constraint region explicitly.

Prereq MATH 351 or 651; OR 542 is rec. Selected applied probability models incl Poisson processes, Markov and semi-Markov processes, renewal theory, Brownian motion and diffusion processes, stationary processes; applications to Markov decision problems, advanced queuing and inventory problems, reliability theory and time series. Theory and application emphasized.

647 Queueing Theory (3:3:0). Prereq OR 542 or Pol. A unified approach to queueing organized by type of model. Single and multiple channel exponential queues; Erlangian models, bulk and priority queues, Networks of queues; general arrival and/or service times; statistical inference and simulation of queues.

648 Production and Inventory Systems (3). Prereq OR 541 and OR 542 or Pol. An analysis of production-inventory systems. Introduction to the use of mathematical modeling for solutions of production planning and inventory control problems. Stochastic inventory systems of lot sized-reorder type; periodic review and single period models. Application of dynamic programming theory to deterministic and stochastic cases. Static and dynamic production-planning models.

649 Topics in Operations Research (3:3:0). Prereq Pol. Advanced topic chosen according to interests of students and instructor from: dynamic programming, inventory theory, queuing theory, Markov and Semi-Markov decision processes, reliability theory, decision theory, network flows, large scale linear programming, stochastic programming.


744 (formerly BUAD 744) Contemporary Issues in Decision Analysis (3:3:0). Prereq DESC 611 (formerly BUAD 641). Application of analytic reasoning and skills to practical problems in business administration. Topics incl problem structure, analysis and solution implementation, emphasizing contemporary approaches to decision analytic techniques.

Statistics Courses (STAT)

610 (formerly BUAD 640) Statistical Foundation for Business Decision Making (3:3:0). Prereq six cr of math. The use of statistical methods as scientific tools in the analysis of practical problems in business decision making. Topics incl: descriptive statistics, probability theory; probability distribution; sampling distribution, inference - estimation and hypothesis testing; elementary decision theory; time series analysis; linear regression and correlation; the analysis of variance.

612 The Use of Computer Statistical Packages (3:3:0).
Prereq Course in statistics. Intro to use of computer packages in the statistical analysis of data. Emphasizes techniques common to use of all statistical packages, incl data checking, cleaning, manipulation, and transformation. Both simple and complex statistical analyses are covered. Techniques are illustrated by concentrating on one of the major statistical packages such as SAS or SPSS. Other packages are discussed and compared. Students are expected to perform computer statistical analyses of data relevant to their respective fields of study. Cr ar not applicable toward the 30 cr req for the M.S. in mathematics.
nor CS, but may be applicable toward a degree in some other fields.

651 Probability Theory (3:3:0). Axioms for a probability space, conditional probability, random variables, distribution functions, moments, characteristic functions, models of convergence, limit theorems.

653 Survey Sampling (3:3:0). Prereq A course in probability or statistics. Review of probability and statistics, basic definitions of sampling, simple random sampling, stratified sampling, systematic sampling, cluster sampling, estimation problems. Emphasizes practical problems encountered in conducting a survey as well as the theoretical background.

654 Applied Statistics (3:3:0) Prereq MATH 351 or equiv or MATH 651. Sampling theory, estimation, hypothesis testing, comparison of data, various classical tests, linear models and analysis of variance, decision theory.

655 Analysis of Variance (3:3:0) Prereq STAT 654 or MATH 352 and a working knowledge of matrix algebra. Single and multifactor analysis of variance, planning sample sizes, intro to the design of experiments, random block and Latin square designs, analysis of covariance.

656 Regression Analysis (3:3:0). Prereq STAT 654 or MATH 352 and a working knowledge of matrix algebra. Simple and multiple linear regression and correlation, polynomial regression, general regression, search techniques for best regression equation, multicollinearity, autocorrelation, normal correlation models.

657 Nonparametric Statistics (3:3:0). Prereq MATH 654 or MATH 352 or equiv. Nonparametric procedures for two or more samples, independent as well as correlated samples, tests of significance and estimation methods, independence problems with nominal and rank data, comparison of parametric vs. nonparametric methods. Emphasis on application of nonparametric techniques to data.


659 Topics in Statistics (3:3:0). Prereq Pol. Topics in statistics not covered in the regular statistics sequence. May be repeated for cr.

752 Mathematical Statistics (3:3:0). Prereq MATH 651. Sampling distributions, point and interval estimation (Cramer-Rao theorem), testing of hypotheses (Neyman-Pearson tests, uniformly most powerful tests, sequential tests), linear models, distribution free methods.

521 Modern Control Theory (3:3:0). Prereq ENGR 421 or equiv. Analysis and design of control systems using state-space approach. Stability, controllability and observability of linear and nonlinear control systems. Introduction to optimal control and system identification. Three hr lecture.

522 Computer Control Systems (3:3:0). Prereq ENGR 421, 520 or Pol. Theory and industrial applications of the use of computers in analysis, design and implementation of feedback control systems. Topics include modeling of systems and signals, computer aided design, optimal design methods, digital controllers, adaptive control and intro to computer aided manufacture and robotics.

570 Quality Control (3:3:0). Prereq Course in statistics. Statistical and managerial techniques applied to quality control and assurance in both manufacturing and nonmanufacturing applications. Topics include quality considerations in design, process vs. design tolerances, acceptance sampling, control chart methodology, and applications.

660 (Formerly ENGR 660) Systems Engineering—Economic Analysis (3:3:0). Prereq ENGR 390, MATH 351, or Pol. An introduction to analysis, design, test, implementation, and management of systems. System life cycle, cost/benefit and analysis, comparison of alternatives, and human/social implications are examined.

661 (Formerly ENGR 661) Systems Engineering—Models and Control (3:3:0). Prereq MATH 351, MATH 304. An introduction to the construction of differential and difference equation models occurring in systems engineering and their solution by transform methods. Elements of system control are discussed.

675 Reliability Analysis (3:3:0). Prereq STAT 654 or equivalent. This course will introduce the student to the concept of system reliability and its relationship to product quality, maintenance costs, and safety engineering. A series of topics will be developed that will incorporate the statistical and mathematical point of view in reliability as a means of helping students develop the capability to design, model, and make inferences on complex systems.

798 Research Project (3:3:0). Prereq 9 hr of grad-level course work. Research project to be chosen and completed under the guidance of a graduate faculty member which results in an acceptable technical report.

799 Master's Thesis (3:6:0:0). Prereq 9 hr of grad level course work and Pol. Research project to be chosen and completed under the guidance of a graduate faculty member, and which results in a technical report acceptable to a three–faculty member committee and an oral defense.
Certificates, Programs, and Additional Graduate Courses
Certificates, Programs, and Additional Graduate Courses

Teaching of English as a Second Language (TESL)

Admission Requirements

Applicants interested in a Certificate in the Teaching of English as a Second Language must be admitted to graduate study through the Graduate School or approved for graduate course enrollment through the Division of Continuing Education. Students who initially enroll in the certificate program through the Division of Continuing Education must apply for regular admission through the Graduate School no later than the second semester of study. At the time formal admission to graduate study is sought, applicants must submit two copies of a writing sample of approximately 1,000 words and two letters of recommendation. The certificate may be pursued concurrently with any of several degree programs offered through the Department of Education, the Department of English, and the Department of Foreign Languages and Literatures, and part of the work toward the certificate may be applicable toward degrees in those departments.

Certificate Requirements

Certificate candidates must complete the following series of graduate English courses, achieving a grade of B or better in each.

1. ENGL 520, 522, 582, and 521 (EDCI 519 may be substituted for ENGL 521)
2. One of the following courses: ENGL 507 (EDCI 507), 581, 615, 690, 784. (Additional courses, including some from other departments, may be used to fulfill this requirement. Apply to the Department of English for a list of approved electives.)

Graduate Certificate in Gerontology

Committee

Catharine Kopac (Chair), Aliza Kolker, Jeanne Mellinger, Mary Montebello, Frederick Schack

Five departments, including the Departments of Sociology, Psychology, Nursing, Education and Health and Physical Education have developed a graduate certificate program in gerontology. This program combines theoretical and applied course work in aging with the student’s graduate curriculum in one of these departments. Since gerontology is by definition multidisciplinary, the certificate program requires students to take course work outside their major field.

A student applying to the certificate program must be in graduate degree status or hold a master’s degree in psychology, education, nursing, or a service-related discipline (e.g., social work, recreational therapy, physical therapy). A student who already holds a master’s degree must choose an area of specialization. As a prerequisite, a student must have had an undergraduate or graduate survey course in aging. The certificate requires 18 hours of graduate courses: 6 in the major area of specialization, 6 outside the major, and 6 hours of practicum (if applicable).

Graduate Certificate in International Nursing

The graduate certificate in international nursing provides an opportunity for students to enrich their understanding of international health through a sequence of courses including, but not limited to, international nursing, anthropology, international relations and economics.

Program Requirements

A student applying to the certificate program must be in degree status in the graduate nursing program.
or hold a master's degree from an N.L.N. accredited program. Application is made through the Graduate School of the University.

Required Courses (9 credits)
NURS 698 International Nursing (3)
NURS 699 Practicum in International Nursing (3)
Nursing Elective (3)

Suggested Electives (15 credits)
GOVT 536 Context of Development
GOVT 537 Selected Problems of Third World Development
ECON 765 Economics of Development
ECON 766 Seminar in Latin American Development
NURS 670 Cultural Dimensions of Aging

A student must complete all required courses and two electives with a 3.00 GPA to achieve the certificate.

**Graduate Certificate in Nursing Administration at the Middle Management Level**

The certificate program is designed for the student with a master's degree in nursing who wishes formalized study in theory and practice in management of nursing care, and practice at the middle management level in health care delivery agencies.

**Program Requirements**

An applicant to the certificate program must have a master's degree in nursing from an N.L.N. accredited program. Application is made through the Graduate School of the University. A requirement for the certificate is 18 credits of graduate courses in which a 3.00 GPA is maintained.

**Program Content**

The program for the certificate (18 credits) consists of the following required courses:
MGMT 610 (formerly BUAD 660) Management Theory and Practice, or equivalent (3)
MGMT 611 (formerly BUAD 661) Cases in Organizational Behavior (3)
NURS 763 Seminar in Nursing Administration at the Middle Management Level I (3)
NURS 765 Practicum in Nursing Administration at the Middle Management Level I (3)
NURS 766 Seminar in Nursing Administration at the Middle Management Level II (3)

**Graduate Certificate in Nursing Education**

The graduate certificate in nursing education combines foundation courses in education with courses in the principles and practices of nursing education. The program prepares students to function in nursing educational roles in both academic and nonacademic settings.

**Program Requirements**

Individuals applying to the Graduate Certificate in Nursing Education must be in degree status in the graduate nursing program or hold a master's degree in nursing from an N.L.N. accredited program. Application is made through the Graduate School of the University.

**Program Content**

EDUC 531 Educational and Psychological Measurement (3)
EDUC 701 Educational Program Development (3)
NURS 657 Perspectives in Nursing Education (3)
NURS 658 Practicum in Nursing Education (3–6*)

Total 15 credits

**Continuing Nursing Education**

Continuing nursing education is an important commitment of the Nursing Department at the University and activities are planned so that individuals can grow personally and professionally.

The Department of Nursing, in cooperation with the University Division of Continuing Education, offers opportunities for credit and noncredit courses representing a variety of subjects focusing on the concerns of nurses and health care consumers.

When planning and presenting continuing education program activities, the Department of Nursing utilizes the wealth of available resources in the Northern Virginia area. Comments and suggestions

*Students must complete 15 credits with a 3.00 GPA. Those who, by virtue of their educational experiences, qualify for a three-credit practicum may choose the remaining three credits from courses designated by the Department of Nursing.
Northern Virginia Cooperative Graduate Engineering Program

Graduate Programs in Engineering and Information Technology are being offered under the auspices of a Cooperative Network in Northern Virginia. This network includes George Mason University (GMU) (as the “host” institution), Virginia Polytechnic Institute and State University (VPI), and the University of Virginia (UVA), and employs a mix of direct classroom laboratory instruction from GMU and live interactive televised lectures from VPI and UVA. Afternoon and evening instruction is provided at several classroom sites, including the GMU Fairfax Campus, the GMU Metro Campus, the Telestar Northern Virginia Graduate Center, and additional off-campus locations.

Master’s degrees will be offered by either UVA, VPI, or GMU following successful completion of the appropriate program of study. Students will apply to a degree program at one of these three institutions based upon course offerings and programs sponsored by an institution and the individual direction a student wishes to follow at the graduate level. Program requirements are the responsibility of the degree-granting institution and subject to these requirements, courses may be taken from any of the three universities. Within the framework of departmental and graduate school approval, the majority of courses must be taken through the student’s home institution and additional courses approved by the home institution may be transferred among the three cooperating institutions. UVA and VPI degree programs are composed primarily of televised courses and are supported by additional courses from the host institution, GMU. These degree programs do not have a thesis or research component. GMU degree programs do have a research project or thesis component and are composed primarily of live classroom instruction, with the possibility of transferring televised courses into these degree programs from VPI and UVA.

Discipline areas of the degree programs from the University of Virginia include: the Master of Materials Science, and the Master of Engineering in Chemical Engineering, Mechanical Engineering, Electrical Engineering, Systems Engineering, or Civil Engineering (Structural Focus). From VPI the following degree programs are offered: Master of Engineering Administration, Master of Science in Mechanical Engineering, Electrical Engineering, Civil Engineering (Environmental Focus) and Aerospace and Ocean Engineering, and the Master of Science and Master of Engineering in Systems Engineering. GMU offers Master of Science degree programs (described within this catalog) in Computer Electronics Engineering, Computer Science, Information Systems, Operations Research and
Management Science, Systems Engineering, Applied Physics, and Mathematics. Also offered from GMU is the Doctor of Philosophy in Information Technology.

Qualified students who wish to take particular graduate courses for professional development may enroll without pursuing formal graduate degree programs. Admission will be based on the student’s background and space available. The Northern Virginia Cooperative Graduate Engineering Program is one of three cooperative efforts in the Commonwealth, the others hosted by Virginia Commonwealth University in Richmond and Old Dominion University in Tidewater. This Cooperative state-wide network, with five participating major universities, is also supported by the Virginia Department of Information Technology and the State Council of Higher Education in Virginia, and provides expanded academic resources to three major urban communities of the Commonwealth.

For program information, contact the Cooperative Graduate Engineering Program, GMU, 102 Finley Hall, (703) 323-3194.

Other Graduate Courses

American Studies Courses (AMST)

502 Problems in American Culture (3:3:0). Prereq grad stdg. Interdisciplinary study of a particular aspect of American culture. Limited to 15 students. Specific content varies and is announced before regis. May be repeated before regis. PoC.

690 Internship (2-6:0:0). Prereq PoC. Internships are non-paying, work-study positions established by AMST Program with employers involved in interdisciplinary AMST issues. Qualified students are placed with area schools, interest groups, agencies, museums, parks or corporations. Placement depends upon availability of positions.

Art History Courses (ARTH)

Art Department

592 Exhibitions Projects (3:3:0). Prereq B.A. or equiv or Pol. Planning, promotion and production of visual art presentations and related events on the GMU campus. Exhibitions are produced by students who alternately serve in all operational capacities from proposal research and budget planning to the graphic design of announcements and the installation of exhibitions.

593 Art Apprenticeships (3-6:0:0). Prereq B.A. or equiv or Pol. Seminar followed by an apprenticeship or internship project with a professional individual or organization in the field of visual arts in the D.C. area. An apprenticeship may provide an introductory work experience in the professional area in which the student is considering a career.

596 Independent Study (3:3:0). Prereq B.A. or equiv or Pol. Independent reading and research on a specific project under the direction of a department member. A written report is required. May be repeated for cr.

599 Special Topics in the History of Art (3:3:0). Prereq B.A. or equiv or Pol. Topics vary and incl women in art, art patronage, art criticism and others.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in art. Program of studies designed by student's discipline director and approved by student's doctoral committee. Course work allows the student to participate in the research activity of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollment may be repeated.

Art Studio Courses (ARTS)

Art Department

592 Exhibitions Projects (3:3:0). Undergrad degree in Art or equiv or Pol. Planning, promotion and production of visual art presentations and related events on the GMU Campus. Exhibitions are produced by students who alternately serve in all operational capacities from proposal research and budget planning to the graphic design of announcements and the installation of exhibitions.

593 Art Apprenticeships (3-6:0:0). Undergrad degree in Art
or equiv or Pol. Intro seminar followed by an apprenticeship or internship project with a professional individual or organization in the field of visual arts in the D.C. area. An apprenticeship may provide an introductory work experience in the professional area in which the student is considering a career.

596 Independent Study (3:3:0). Undergrad degree in Art or equiv or Pol. Independent reading and research on a specific project under the direction of a department member. A written report is required. May be repeated for cr.

601, 602 Graduate Drawing and Painting (3:0:0), (3:0:0). Prereq Undergrad degree in art or art education (B.A. or B.F.A.) or equiv. Independent drawing and painting workshop with emphasis on individual development.

605, 606 Graduate Printmaking Studio (3:0:0), (3:0:0). Prereq Undergrad degree in art (B.A. or B.F.A.) or equiv or Pol. Independent printmaking workshop with emphasis on individual projects and development.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in art. Program of studies designed by student's discipline director and approved by student's doctoral committee. Course work allows the student to participate in the research activity of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollment may be repeated.

Chemistry Courses (CHEM)

500 Selected Topics in Modern Chemistry (3:3:0). Topics of interest in biochemistry and in physical, organic, inorganic, and analytical chemistry. Rec for teachers of general science and chemistry.

501 Lab Demonstration Techniques in the Teaching of Chemistry (3:3:0). Lab for developing proficiency in the conduct of lab demonstrations. Rec for teachers of chemistry and general science.

513 (413) Special Topics in Organic Chemistry (3:3:0). Prereq CHEM 313-314. Synthetic and mechanistic organic chemistry with emphasis on topics such as heterocyclics, natural products, and biologically active compounds. Relation of applied organic chemistry to consumer products, incl drugs and agricultural chemicals.

523 (423) Selected Topics in Analytical Chemistry (3:3:0). Prereq CHEM 422. Principles and applications of currently used methods of analysis. Topics incl differential pulse polarography, anodic stripping voltammetry, atomic absorption, spectroscopy, fluorescence, emission spectrometry, neutron activation, analysis, and spark source mass spectrometry. Advances and applications to trace metal determinations in environmental samples.

533 (431, 432, 433) Selected Topics in Physical Chemistry (3:3:0). Prereq CHEM 331, 332. Advanced study of topics in physical chem, selected from among the areas of thermodynamics, atomic and molecular structure, spectroscopy, and chemical kinetics. Content varies; announced before regis. May be retaken for cr with PoD.


565 (463) Biochemistry Lab I (2:1:3). Prereq or coreq CHEM 563 (461). Intro to experimental methods used to study the chemical and physical properties of proteins, carbohydrates, lipids, and nucleic acids. Completes the corresponding lecture course. Designed for those who have had no previous exposure to the specialized techniques used in biochemical research. One hour recitation.


567 (5611 Protein Biochemistry (3:3:0). Prereq CHEM 563 (461), 564 (462) or Pol. Topics incl the structural, transport, and immunological roles of proteins with emphasis on role of proteins as biological catalysts. Current theories of enzyme catalysis as well as pertinent experimental techniques. Important structural proteins from muscle and connective tissue as well as free and membrane-bound transport proteins.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in chemistry. Program of studies designed by student's discipline director and approved by student's doctoral committee which allows the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments are repeated according to each student's program.

Communication Courses (COMM)

Communication courses at the 500 level are open to post-baccalaureate students or Communication majors with advanced undergraduate standing and other seniors with PoD.

501 Communication in Professional Relationships (3:3:0). Theoretical perspectives and relevant research related to communication techniques useful in various professional roles and situations. Relates theoretical foundations to practice, allowing individual students to assess theories of communication and their applications in individual professional fields.

502 Theories of Interpersonal Communication (3:3:0). Prereq COMM 301 or Pol. Contemporary theories of interpersonal communication. Analysis of theories, concepts and approaches to the improvement of interpersonal comm. Extensive examination of interpersonal comm research is included.

504 Communication and Interpersonal Conflict (3:3:0). Prereq Admission to Grad school or senior standing and Pol. This course provides a theoretical introduction and experiential learning in the role of communication in conflict and conflict management. The focus is upon interpersonal interactions, including dyadic and small group levels in various settings such as friendships, marriage, family, and the work-place. The course examines the factors that

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generate conflicts and the communication strategies and skills that help shape conflict interaction toward productive ends. Class activities include lectures, guided discussions, case analyses, exercises, and simulations.

505 Intercultural Communication (3:3:0). Analysis of communication variables as they relate to communication across cultures. Topics incl nonverbal communication, time conceptualizations, perceptual and attitudinal foci, values, social organization patterns, cultural norms, language, ethics, conflict across cultures and research in intercultural communication.

506 Communication in International Organizations (3:3:0). Focus on interpersonal aspects of government and business relations both outside the U.S. and with foreign visitors in the U.S., with extensions being made to management of subcultural differences within U.S. national organizations. Emphasis on developing an understanding of how cultural differences influence managerial activities, and upon learning to deal effectively with these cultural differences.

510 Studies in Oral Interpretation (3:3:0). A comprehensive examination of the role of the oral communicator in the selection, adaptation and performance of literature. Seminar course topics vary depending upon genre being considered. May be repeated three times for cr if each course is devoted to a different genre.

530 Theories of Small Group Communication (3:3:0). Advanced levels of theory and practice of small group interaction. Examination of current research in small group communication; a focus on learning the theory and application of the theory to relevant setting.

535 Organizational Communication (3:3:0). An analysis of communication systems and processes within organizations, both public and private. Specific topics include conflict management, group decision making, interviewing, technical presentations, and use of various channels to improve internal and external communication for the organization.

536 Communication Consulting (3:3:0). Prereq COMM 335. Investigation of theories which serve as the foundation for communication consulting. Designed to provide both theoretical information and mechanisms for application necessary to modify communicative behavior within organizations.

540 Directing Forensics Programs in Individual Events (3:3:0). An investigation of the role of the individual events forensics educator in developing a high school or college program, coaching and judging competitive original speaking and oral interpretation events, and tournament management.


543 Advanced Debate Theory (3:3:0). Prereq Prior debate and/or debate coaching experience or Pol. Theoretical issues involved in the practice of debate. Critical examination of new issues in theory and discussion of revisions in theories designed to enhance academic debate.

550 Communication in the Classroom (3:3:0). Prereq 84 hr. Examination of both verbal and nonverbal elements in the classroom which produce meaning among teachers and students. Communication theories and skills needed to manage the communication environment in the classroom. Nonverbal aspects of space, time, action, and form are considered as they impact teaching choices. Verbal patterns for skills of classroom management: questioning skills, enhancing students' self-concept, systematic feedback, parental communication and student development.

551 Developing Students' Speaking and Listening Skills (3:3:0). Prereq 84 hr. Speaking and listening skills which develop the oral communication competency of children and adolescents. Emphasis on development of assignments that both directly and indirectly develop communication competence. The five functions of communication and steps in developing them are developed in the context of integrating the basic skills at the elementary level and direct teaching at the secondary level. Issues of definition in terms of philosophies of communication education and curriculum development, as well as competency assessment are covered.

590 Seminar in Communication (3:3:0). Intensive study of specific topics in interpersonal, public and mass communication. Specific content varies. May be repeated for cr with PoD.

596 Directed Readings and Research (1-3:0:1-3). Prereq Grad stdg and PoD. Reading and research on a specific topic, under the direction of a faculty member. A written report is required; an oral or written examination over the material may be required. Course may be repeated for a maximum of six credits.

597 Independent Production (1-3:0:1-3). Prereq Grad stdg and PoD. Media or creative production activities, under the direction of a faculty member. A completed production is required; a written report and an oral examination may be required. Course may be repeated for a maximum of six credits.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. student admission to study in communication. A program of studies designed by student's discipline director and approved by student's doctoral committee. Course work allows the student to participate in the research activity of discipline director and results in a paper reporting original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollment may be repeated.

Dance Courses (DANC)

510 Independent Study (3:0:0). Prereq dance major with 84 hr, grad stdg in dance or theatre or Pol. Individual research or a creative project in close consultation with an instructor. Projects selected from performance, choreography, technical theatre as it applies to dance, management, dance history, or criticism.
527 Advanced Modern Dance (3:0:6). Prereq Audition. Course provides the advanced student the opportunity for continued training. Emphasis and importance is placed on the attainment of high technical quality and performing skills. Six hrs per week. May be taken for a total of 18 credits.

560 Advanced Choreography (3:3:0). Prereq DANC 360 or Pol. Intensive study and exploration of advanced choreographic forms culminating in a public performance of a complete dance work. Three hrs per week. May be taken for a total of 12 credits.

598 Philosophy and Aesthetics of Dance (3:3:0). Prereq DANC 390 and 391 or Pol. A study of the philosophical theories and aesthetic principles of dance as a performing art. What dancing is, what it expresses, what it creates, and how it is related to other arts and artists will be explored.

Geology Courses (GEOL)

500, 501 Selected Topics in Modern Geology (1-3:1-3:0). (1:3-1:3:0). Prereq Baccalaureate degree in geology or Pol. Lecture/lab/field trip. Topic is designated in the class schedule.

514 Biostatigraphy and Biofacies Analysis (4:3:3). Prereq Baccalaureate degree in geology or Pol. Use of fossils in correlating and dating rock units in various fields of energy exploration. Relationships between fossils and paleo-environments. May incl field trips.

515 Advanced Structural Geology (4:3:3). Prereq Baccalaureate degree in geology or Pol. The concepts of stress and strain in rock materials, and the application of this theory to understanding complex three-dimensional structures in deformed rocks. Emphasis is placed on a quantitative approach to resource deposits. May incl field trips.

516 Appalachian Stratigraphy (3:3:0). Prereq Baccalaureate degree in geology or Pol. Analysis of the stratigraphy and tectonics of sedimentary rocks of the Appalachian Mountain system, with emphasis on the stratigraphic provinces that contain energy resources.

618 Geochemical Methods of Analysis (4:3:3). Prereq Baccalaureate degree in geology or Pol. Principles and application of geochemical analysis as applied to rocks found in areas of energy resources. Concentration on techniques of x-ray and optical spectroscopy and atomic absorption.

620 Organic Geochemistry (4:3:3). Prereq Baccalaureate degree in geology or Pol. The production of natural organic compounds. Discussions on the influence of diageneric factors such as hydrolysis, heat, and pressure on such compounds as cellulose, lignin, proteins and lipids, and a consideration of the origin of soil organic matter, carbonaceous shales, coal, and crude oil. Mayincl field trips.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in geology. Program of studies designed by student's discipline director and approved by student's doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the students. The paper is presented in a subsequent D.A.Ed. summer seminar. Enrollments may be repeated.

**Philosophy and Religion Courses (PHIL)**

510 Seminar in the Ethics of Health Care (3). Prereq junior-senior or graduate standing or Pol. An examination of moral dilemmas within the health care profession based on ethical theories and principles. Special emphasis on patients' rights, social justice of health care and evolving health care technologies.

512 Issues in Philosophy and Literature (4:3:0). Prereq senior standing, 6 hr of 300-level English and 6 hr of 300-level philosophy or Pol. The topic of the seminar will vary from term to term; possible topics include structuralism, technology, form and matter, conceptions of the future. The course will be cross-listed and team taught.

531 Freud and Philosophy (3:3:0). Prereq 6 hr in philosophy or a course in personality theory, or Pol. Exploration of philosophical aspects of Freud's thought, focusing on Freud's philosophy of human nature and culture and its influence on contemporary thought.

555 Environmental Ethics (3). Prereq junior-senior or graduate standing, and 3 cr in philosophy plus a combined total of 9 additional cr in philosophy and science or Pol. An examination of ethical principles affecting environmental issues with special emphasis on the problems encountered by environmental biologists.

574 Current Issues in Philosophy of Psychology (3:3:0). Prereq A combined total of at least 12 cr in philosophy or psychology, at least 3 of which must be in philosophy and at least 3 of which must be at 300 level or above, or Pol. A careful examination of some issue or issues of current interest to both philosophers and psychologists. Typical of issues examined will be the mind-body problem, philosophical and psychological implications of work in artificial intelligence and philosophical issues in psycholinguistics.

591 Special Topics in Philosophy (3:3:0). Prereq Grad standing and Pol. An examination of specific topics in philosophy which are both of central interest in that field, and of interdisciplinary interest as well. Topics will be selected with special reference to the areas of philosophy of technology, aesthetics, philosophy of religion, and ethics and social and political philosophy. Course may be repeated for credit up to three times (when the course content differs) with permission of the instructor and the student's adviser.

800 Studies for the Doctor of Arts in Education (var cr). Prereq D.A.Ed. admission to study in philosophy. Program of studies designed by student's discipline director and approved by student's doctoral committee which brings the student to participate in the current research of the discipline director and results in a paper reporting the original contributions of the student. The paper is presented in a subsequent D.A.Ed. summer seminar. May be repeated.

591 Current Issues in Religious Studies (3:3:0). Prereq Grad standing and Pol. An examination of special topics in
religious studies which are of central interest in that field and of interdisciplinary interest as well. Topics will be selected with special reference to their current importance in the field of religious studies and their pertinence to discussions of the role of religion in contemporary social, cultural, and political life. Course may be repeated for credit up to three times (when the course content differs) with permission of the instructor and the student's adviser.
Reference
Reference

Glossary of Course Symbols

Computer names of courses offered by the University

| Accounting | AMCT |
| American Studies | AMST |
| Anthropology | ANTH |
| Art History | ARTH |
| Art Studio | ARTS |
| Astronomy | ASTR |
| Biology | BIOL |
| Business Legal Studies | BULE |
| Cartography | GECA |
| Chemistry | CHEM |
| Chinese | CHIN |
| Classics | CLAS |
| Communication | COMM |
| Computer Science | CS |
| Dance | DANC |
| Decision Sciences | DESC, IRM |
| Drama (Theatre) | THR |
| Economics | ECON |
| Education | EDUC |
| Education: Administration/Supervision | EDAS |
| Education: Elementary/Secondary | ED WI |
| Education: Guidance/Counseling | EDGC |
| Education: Reading | EDRD |
| Education: Special Education | EDSE |
| Engineering | ENGR |
| English | ENGL |
| European Studies | EUST |
| Finance | FIAN |
| Foreign Language | FRLN |
| French | FREN |

Geographic and Cartographic Sciences
Geography: GEOG
Geology: GEOL
German: GERM
Government and Politics: GOVT
Greek: GREE
Health Education: HEAL
History: HIST
Information Systems: INF S
Italian: ITAL
Japanese: JAPA
Korean: KORE
LAC (Regional Cultures): LAC
Latin: LATN
Latin American Studies: LAS
Law (Also see LAW in Law School Catalog)
Liberal Studies: LS
Management: MKTG
Marketing: MKTG
Mathematics: MATH
Medical Technology: MTCH
Music: MUSI
Nursing: NURS
Operations Research: OR
PAGE (Plan for Alternative General Education): PAGE
Park, Recreation, and Leisure Studies: PRLS
Philosophy: PHIL
Physical Education: PHED
Physics: PHYS
Plan for Alternative General Education: PAGE
Portuguese: PORT
Psychology: PSYC
Public Administration: PUAD
Real Estate and Urban Development: REUD
Regional Cultures: LAC
Religion: RELI
Russian: RUSS
Social Work: SOCW
Sociology: SOCI
Spanish: SPAN
Statistics: STAT
Theatre: THR
University: UNIV
Vietnamese: VIET

Course Abbreviations

1. Course titles are followed by numbers in parentheses (0:0:0), separated by colons. The numbers have the following significance:
   First number: semester credit hours for the course

http://catalog.gmu.edu
Second number: hours of lecture/seminar per week for the course.
Third number: hours of laboratory/studio per week for the course.

2. For independent study, reading, topics, or similar courses, individual instructors set hours.

3. The following abbreviations are used in course descriptions:
   - coreq - corequisite(s)
   - cr - credit(s)
   - equiv - equivalent(s)
   - grad - graduate(s)
   - grad stdg - graduate standing
   - hr - hour(s)
   - incl - including/include(s)
   - intro - introduction/introductory
   - lab - laboratory(ies)
   - nat - natural
   - PoA - Permission of adviser
   - PoC - Permission of chair
   - PoD - Permission of department
   - Pol - Permission of instructor
   - prereq - prerequisite(s)
   - prog - program
   - rec - recommend(ed)/recommendation(s)
   - regis - registration/register
   - req - required(d)/requisite(s)/requirement(s)/requires
   - sci - science(s)
   - sem - semester(s)
   - undergrad - undergraduate(s)

Course Numbering

1. Courses numbered 500 and above are graduate courses.

2. Courses are occasionally renumbered by departments. Additional credit may not be received for a course under a different number if all requirements have been completed and a satisfactory letter grade has been earned in the course under its original number. Graduate students are required to determine prior to registration that they have not completed a subject in a prior semester under a different number. For one year after the change the new number is accompanied by the old number in parentheses. Thus, 791 (591) means that the old course number was 591, and the new course number is 791. Students also may check with the department offering the course work to be certain that they are not repeating a graduate course for which they already have credit.

3. General Numbers for Graduate Courses:
   - 500-599 Graduate courses open only to graduate students (admitted to master’s or doctoral programs), to other bachelor’s degree holders, and to approved advanced undergraduate students. Advanced undergraduate students who have secured the permission of the department offering the course may select from these courses to accumulate the hours necessary for the completion of an undergraduate degree; and with the written permission of the dean of the graduate school, they may take these courses for reserve graduate credit.
   - 600-699 Graduate courses open only to graduate students (admitted to master’s or doctoral programs) and to other bachelor’s degree holders.
   - 700-799 Master’s level graduate courses open only to graduate students (admitted to master’s or doctoral programs). These numbers are used only for master’s level course work.
   - 800-999 Doctoral level graduate courses open only to graduate students admitted to study in doctoral programs. These numbers are used primarily for doctoral level (post-master’s) course work.

4. Special Numbers for Graduate Courses (Courses with these numbers are reserved for the uses designated.)
   - 600-609 Limited applicability graduate credit courses. Courses intended for in-service professional development and not directly leading to a graduate degree. From courses with these numbers a limited number of hours may be applied to a graduate degree.
   - 798 Master’s project research. A course under the supervision of a graduate faculty member resulting in the final professional project to be submitted in partial fulfillment of the requirements for the professional master’s degree.
   - 799 Master’s thesis research. A course for research under the supervision of a graduate faculty member resulting in a master’s thesis to be submitted in partial fulfillment of the requirements for the master’s degree.
   - 800 Studies for the Doctor of Arts in Education program.
   - 998 Doctoral project research. A course under the supervision of a graduate faculty member resulting in the final professional project to be submitted in partial fulfillment of the requirements for the professional doctoral degree.
   - 999 Doctoral dissertation research. A course for research under the supervision of a graduate faculty member resulting in a doctoral dissertation to be submitted in partial fulfillment of the requirements for the doctoral degree.

790, 890 Supervised practicum.
794, 894 Internship.
796, 896 Directed reading and research courses for master’s and doctoral level students.
Honor Code

In order to promote a stronger sense of mutual responsibility, respect, trust, and fairness among all of the members of George Mason University, and with the desire for greater academic and personal achievement, we, the members of George Mason University, have set forth the following code of honor:

I. The Honor Committee

Duties of the Honor Committee:
The Honor Committee is to be a group of students elected from the student body whose primary and indispensable duty shall be to instill the concepts and spirit of the Honor Code within the student body. The secondary function of this group shall be to sit as a hearing committee on all alleged violations of the code.

II. Extent of the Honor Code

The Honor Code of the George Mason University shall deal specifically with:

(A) Cheating and attempted cheating
(B) Plagiarism
(C) Lying
(D) Stealing

A. Cheating encompasses the following:
1. The willful giving or receiving of an unauthorized, unfair, dishonest, or unscrupulous advantage in academic work over other students.
2. The above may be accomplished by any means whatsoever, including, but not limited to, fraud, duress, deception, theft, trick, talking, signs, gestures, copying from another student, and the unauthorized use of study aids, memoranda, books, data, or other information.
3. Attempted Cheating.

B. Plagiarism encompasses the following:
1. Presenting, as one's own the words, the work, or the opinions of someone else without proper acknowledgment.
2. The borrowing of the sequence of ideas, the arrangement of material, or the pattern of thought of someone else without proper acknowledgment.

C. Lying encompasses the following:
The willful and knowledgeable telling of an untruth or falsehood as well as any form of deceit, attempted deception, or fraud in an oral or written statement relating to academic work. This includes but is not limited to:
1. Lying to administration and faculty members.
2. Falsifying any University document by mutilation, addition, or deletion.
3. Lying to Honor Committee members and councils during investigation and Hearing. This may constitute a second charge with the Committee members (who are acting as judges during that specific hearing) acting as Accusers.

D. Stealing encompasses the following:
The taking or appropriating without the right or permission to do so, and with the intent to keep or to make use of wrongfully, property belonging to any member of the George Mason community or any property located on the University campus. (This section is relevant only to academic work and related materials.)

III. Responsibility of the Faculty

In order to alleviate misunderstanding, each professor is required to delineate at the beginning of each semester what constitutes a violation of the Honor Code in his class. This should include an explanation of:

A. The extent of group participation that is permissible in preparing term papers, laboratory exhibits or notebooks, reports of any kind, tests, quizzes, examinations, homework, or any other work;

B. The extent to which the use of study aids, memoranda, books, data or other information is authorized during recitations, tests, quizzes, examinations, reports of any kind, laboratory sessions, or any other work; and

C. The nature of plagiarism. Each professor is required to send the Honor Committee a written copy of his policy, which will be kept on file. Any faculty member who witnesses an Honor Code violation should proceed as outlined under Procedures for Reporting a Violation.

IV. Responsibility of the Students

Students should request a delineation of policy from each professor if none is given at the beginning of each semester. Students should also request an explanation of any part of the delineation that they do not understand. It is the responsibility of the student to understand his professor's policies with regard to the Honor Code. It is also the responsibility of the student to understand the provisions of the Honor Code.

All students in the University have the duty, as participating members of this community, to report to a member of the Honor Committee any violations of the Honor Code within the prescribed time as outlined under Procedures for Reporting a Violation. This duty is of importance not only because it enforces the Honor Code, but also because it gives each student the opportunity to express his respect for personal integrity and an honest academic community.

V. Procedure for Reporting a Violation

Any student or faculty member witnessing or discovering a violation of the Honor Code shall enlist, wherever and whenever possible, one or more corroborating witnesses to the overt act. The accuser(s) (student or faculty) will, within 15 working days from date of realization, inform the suspected party with a letter of accusation provided by the Honor Committee.

The Honor Committee shall retain a copy of the accusation letter. The letter must inform the suspected party that he has four (4) working days to contact a member of the Honor Committee and be advised of his rights and options, or the Honor Committee shall commence an investigation, this investigation not involving a presumption of guilt on the part of the accused. Any member of the George Mason University Academic Community who has knowledge of but does not report an Honor Code Violation may be accused of lying under the Honor Code.

VI. Counsel for the Accused and Accuser

Counsel for the Accused and accuser may be provided by any member of the George Mason University student community, excluding members of the Honor Committee.

VII. Appearance of Witnesses

The Honor Committee may require any member of the University community to appear as a witness before the Committee at the time of the hearing. All requests for such appearances shall be issued by the Chairman of the Honor Committee. (The appearance of the accuser is required unless otherwise exempted by the request of both counsels, or the Chairman of the Honor Committee.)

VIII. Verdict

In order to find a student guilty of an honor violation, all of the voting members must vote for a verdict of "guilty." If the vote is not unanimous, the defendant shall be acquitted.
A student may not be tried more than once for the same offense except when an appeal is granted.

IX. Penalty

If the accused is found guilty of an honor violation, the Honor Committee shall determine the nature of the penalty by majority vote.

The Honor Committee is not restricted to any one kind of penalty but will determine a penalty commensurate with the seriousness of the offense. Typical of the range of penalties that may be given are:

A. Oral Reprimand:
An oral statement to the student by the Chairman of the Honor Committee. No entry is made on the student’s scholastic record.

B. Written Reprimand:
A written censure, which is placed in the confidential files of the Honor Committee, and made part of the student’s academic file, but not the student’s scholastic transcript records.

C. Nonacademic Probation:
Exclusion from holding an elected or appointed office in any student activity or organization. A student on nonacademic probation will be ineligible to participate in any athletic or other activity representing the University and will be ineligible to serve as a working staff member of any student organization. This action is noted in the Judicial Administration’s file but not made a part of the student’s scholastic record.

D. Failing Grade:
Recommendation in writing to the instructor of a grade of F for the work involved, or for the entire course, is made. The student’s permanent record will reflect the academic evaluation made by the instructor.

E. Suspension from the University for One or More Semesters:
A student’s scholastic record would read: “Nonacademic suspension (date to date).” This penalty will be recommended to the Judicial Administrator only in extraordinary circumstances, such as for repeated offenses.

X. Appeal

A written request for an appeal, detailing new evidence, procedural irregularities, or other sufficient grounds, which may have sufficient bearing on the outcome of the trial, must be presented to the Chairman of the Honor Committee within seven (7) working days after the date on which the verdict was rendered.

XI. Keeping of Records

In the event that the accused is found “not guilty,” the Chairman of the Honor Committee will destroy all records of the hearing.

If the accused is found guilty, the records of the hearing shall be kept in the file of the Honor Committee. These records shall include a full transcript of the hearing and all evidence presented at the hearing; if the evidence belongs to any person other than the defendant, the original shall be returned to the owner and a copy shall be kept with the records of the Honor Committee.

XII. Composition of the Committee

The Honor Committee shall be proportionally composed of students from each school and faculty adviser(s), although the latter shall be a non-voting member. Undecided majors, B.I.S. students, and continuing education students shall be considered together as a school. The total number of members, exclusive of freshmen, shall be as close to seventeen as practicable. Four freshmen will be appointed in the Fall to serve until the following Spring election. One or more clerks will be appointed by the Committee from the student body who will serve as aides to the Chairman.

The Chairman of the Committee will be elected by majority vote of the Committee members. For a particular hearing, five members of the Honor Committee will be designated as voting members.

The Faculty Adviser, as a nonvoting member of the Committee, should sit with and advise the Committee at all hearings. The Faculty Adviser shall be chosen by the Honor Committee.

Previous Honor Committee members may serve during the summer term.

XIII. Eligibility of Members

Any student who maintains a 2.0 grade-point average and is in good standing with the University shall be eligible for the Honor Committee. A Committee member must maintain a 2.0 average to continue in office.
XIV. Election of the Honor Committee

The Honor Committee shall be elected in the Spring semester. The term of office shall begin upon election and run until the following Spring election.

In the Fall semester, the chairman shall appoint new members to fill any vacancies that have occurred and to fill the four freshman seats on the Committee.

All appointments made by the Chairman are subject to majority vote of approval by the remaining members.

XV. The Challenging and Voluntary Withdrawal of a Member of the Committee from Participation in a Particular Hearing

An accused who challenges the right of any member of the Honor Committee to sit in judgment on him must present cause to the Chairman of the Hearing.

The Hearing Committee shall then decide the validity of the challenge with the challenged member abstaining from voting. A simple majority shall decide the validity of any challenge. A successfully challenged Committee member shall not be present during the hearing.

A member of the Honor Committee shall withdraw from a specific hearing if he feels that he is prejudiced as to the facts in the case.

XVI. Provisions for Amendments

Upon petition of 20 percent of the student body, a committee shall be appointed by the Student Government to consider amendments to, or revisions of the Honor Code, said amendments and/or revisions to be then voted on by the student body as a whole. A two-thirds majority of the votes cast shall be necessary for acceptance of any amendment or revision.

The Honor Committee may also propose amendments to be voted on by the student body as described in paragraph one of this section.

Approved amendments will take effect immediately except that new provisions will not be applied to cases initiated prior to amendment.

Revised 4/15/81

Firearms

The unauthorized possession, storage, display, or use of any kind of ammunition, firearms, fireworks, explosives, air rifles, air pistols, or other lethal instruments is prohibited on University property. Any questions regarding this regulation should be directed to the Campus Police (323-2158).

Alcoholic Beverages

The possession or consumption of any alcoholic beverage is prohibited on University grounds unless the University has sanctioned the location and/or conditions for possession or consumption. Related regulations are described in the Policy on the Service of Alcoholic Beverages, available from the Student Activities Office or the information centers in Student Unions I and II.

Smoking

Smoking is not permitted in classrooms, lecture halls, theaters, or in the University libraries. Lounge areas in the Student Building and other University buildings have been set aside for this purpose.

Drugs

Students at the University using or otherwise involved with illegal drugs may be subject to suspension or expulsion in addition to any action taken by local or state authorities.

Bicycles/Skateboards

Bike racks are provided at various locations on campus for the convenience of students who bike to and from the University. For resident students, storage areas for bikes are located near Buildings 2, 4, and 8. Bikes are to be parked only in these areas.

Bikes and skateboards are not permitted on sidewalks, ramps, foot paths, or grassy areas of campus or inside University buildings.

Pets

No pets are permitted in University buildings at any time. Additionally, pets that are on campus grounds must be on a leash and under supervision at all times.

Solicitors and Salesmen

Solicitors and salesmen, except on official business with the University, are not permitted on the campus.
Notices

Although this catalog was prepared on the basis of the best information available at the time of publication, all information including statements of tuition and fees, course offerings, admissions and graduation requirements, is subject to change without notice or obligation.

Admission Policy

Admission to the University and acceptance into a particular degree program care competitive.

Space available is determined largely by the availability of resources. Demand for resources is balanced to meet the University's many educational responsibilities. The University, therefore, engages in qualitative evaluation of students and makes selections based on performance and evidence of prospects for success.

Accreditation

George Mason University is fully accredited by the Southern Association of Colleges and Schools.

Education. The following programs have been approved by the Virginia State Department of Education and the National Council for Accreditation of Teacher Education:
Elementary Education
Guidance and Counseling
Reading
School Administration and Supervision
Secondary Education
Special Education

Nursing. M.S.N. Degree. This Nursing Program is accredited by the Virginia State Board of Nursing and by the National League for Nursing.

Privacy of Student Records

Annually, George Mason University informs students of the Family Educational Rights and Privacy Act of 1974. This Act, with which the institution intends to comply fully, was designed to protect the privacy of education records, to establish the right of students to inspect and review their education records, and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the Family Educational Rights and Privacy Act Office (FERPA) concerning alleged failures by the institution to comply with the Act.

Local policy explains in detail the procedures to be used by the institution for compliance with the
provisions of the Act. The Office of the Registrar keeps a copy of the policy and also maintains a Directory of Records listing all education records maintained on students by this institution.

Questions concerning the Family Educational Rights and Privacy Act may be referred to the Office of the Registrar.

Equal Opportunity/Affirmative Action

George Mason University is an Equal Opportunity/Affirmative Action institution committed to the principle that access to study or employment opportunities afforded by the University, including all benefits and privileges, be accorded to each person—student, faculty, or staff member—on the basis of individual merit and without regard to race, color, religion, national origin, sex, age, or handicaps (except where sex or age is a bona fide occupational qualification). Appropriate procedures have been adopted for the promotion of this principle in every phase of University operations. Furthermore, affirmative action will be taken to ensure that opportunities afforded by the University are fully available to ethnic minorities, women, and the disabled. The University will make every reasonable accommodation to enable the handicapped to undertake work or study for which they qualify.

The University is also committed to the principle prescribed in Title IX of the Education Amendments of 1972, which specifically prohibits discrimination on the basis of sex in educational programs or activities which receive federal funds.

The University is also committed to the principles set forth in the Rehabilitation Act of 1973, Section 504, regarding disabled students.

Students, employees, or applicants for admission or employment who believe that they have not been dealt with by this University in accordance with the principles and requirements stated above may address the Office of Affirmative Action, George Mason University, stating the facts that occasioned the complaint, presenting any relevant documents or correspondence, and requesting assistance in resolution of the matter.

Student Consumer Information

Prospective and enrolled students may obtain information related to the cost of attending the University, financial aid programs available, and academic programs by consulting the appropriate office. For information related to the cost of attending the University and tuition refund policies, contact the Office of the Cashier (Module C; 323-2119). For information related to financial aid programs and developing personal expense budgets, contact the Office of the Director of Student Aid (Student Union I, Room 354; 323-2176). For information related to graduate academic programs, requirements, and related matters, contact the Office of Graduate Admissions (Finley Building, Room 100; 323-2104); for undergraduate, contact the Office of Admissions (Finley Building, Room 117; 323-2102); for other questions, contact the University switchboard, 323-2000.

Summer Session

Summer Session consists of several terms, ranging in length from five to eight weeks, during the period May 27 through August 2. Classes are offered during both day and evening hours. For details, consult the Summer Session Catalog which is available in March.

Catalog Publication

The University Catalog is published annually by George Mason University, 4400 University Drive, Fairfax, Virginia 22030. Preparation and editing by the Office of Design and Publications Services in conjunction with the Office of Academic Affairs.
State Domicile Legislation

Section 23-7.4 of the Code of Virginia

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 23-7.4 as follows:

§23-7.4. Eligibility for in-state tuition charges.—A. For purposes of this section the following definitions shall apply:

"Date of the alleged entitlement" means the first official day of class within the term, semester or quarter of the student's program.

"Dependent student" means one who is listed as a dependent on the federal or state income tax return of his parents or legal guardian or who receives substantial financial support from his parents or legal guardian.

"Domicile" means the present, fixed home of an individual to which he returns following temporary absences and at which he intends to stay indefinitely. No individual may have more than one domicile at a time. Domicile, once established, shall not be affected by mere transient or temporary physical presence in another jurisdiction.

"Domiciliary intent" means present intent to remain indefinitely.

"Emancipated minor" means a student under the age of eighteen on the date of the alleged entitlement whose parents or guardians have surrendered the right to his care, custody and earnings and who no longer claim him as a dependent for tax purposes.

"Full-time employment" means employment resulting in, at least, an annual earned income reported for tax purposes equivalent to fifty work weeks or forty hours at minimum wage.

"Independent student" means one whose parents have surrendered the right to care, custody and earnings, have ceased to support him, and have not claimed him as a dependent on federal and state income tax returns for at least twelve months prior to the date of the alleged entitlement.

"Special arrangement contract" means a contract between a Virginia employer or the authorities controlling a federal installation or agency located in Virginia and a public institution of higher education for reduced rate tuition charges as described in paragraph G of this section.

"Substantial financial support" means financial support in an amount which equals or exceeds that required to qualify the individual to be listed as a dependent on federal and state income tax returns.

"Unemancipated minor" means a student under the age of eighteen on the date of the alleged entitlement who is under the legal control of and is financially supported by either of his parents, legal guardian or other person having legal custody.

"Virginia employer" means any employing unit organized under the laws of Virginia or having income from Virginia sources regardless of its organizational structure, or any public or nonprofit organization authorized to operate in Virginia.

B. In order to become eligible for in-state tuition, an independent student shall establish by clear and convincing evidence that for a period of at least one year immediately prior to the date of the alleged entitlement, he was domiciled in Virginia and had abandoned any previous domicile, if such existed.

In order to become eligible for in-state tuition, a dependent student or unemancipated minor shall establish by clear and convincing evidence that for a period of at least one year prior to the date of the alleged entitlement, the person through whom he claims eligibility was domiciled in Virginia and had abandoned any previous domicile, if such existed.

In determining domiciliary intent, all of the following applicable factors shall be considered: continuous residence for at least one year prior to the date of alleged entitlement, state to which income taxes are filed or paid, driver’s license, motor vehicle registration, voter registration, employment, property ownership, sources of financial support, location of checking or passbook savings accounts and any other social or economic relationships with the Commonwealth and other jurisdictions. Domiciliary status shall not ordinarily be conferred by the performance of acts which are auxiliary to fulfilling educational objectives or are required or routinely performed by temporary residents of the Commonwealth. Mere physical presence or residence primarily for educational purposes shall not confer domiciliary status.

Those factors presented in support of entitlement to in-state tuition shall have existed for the one-year period prior to the date of the alleged entitlement.

C. The domicile of a married person shall be determined in the same manner as the domicile of an unmarried person.
The domicile of an emancipated minor shall be established in the same manner as any other independent student.

Any alien holding an immigration visa or classified as a political refugee shall also establish eligibility for in-state tuition in the same manner as any other student. However, absent congressional intent to the contrary, any person holding a student or other temporary visa shall not have the capacity to intend to remain in Virginia indefinitely and, therefore, shall be ineligible for Virginia domicile and for in-state tuition charges.

The domicile of a dependent student shall be rebuttably presumed to be the domicile of the parent or legal guardian claiming him as an exemption on federal or state income tax returns currently and for the tax year prior to the date of the alleged entitlement or providing him substantial financial support.

A matriculating student who has entered an institution classified as out-of-state shall be required to rebut by clear and convincing evidence the presumption that he is in the Commonwealth for the purpose of attending school and not as a bona fide domicile.

For the purposes of this section, the domicile of an unemancipated minor or a dependent student eighteen years of age or older may be either the domicile of the parent with whom he resides or the parent who claims the student as a dependent for federal and Virginia income tax purposes for the tax year prior to the date of the alleged entitlement and is currently so claiming the student. If there is no surviving parent or the whereabouts of the parents are unknown, then the domicile of an unemancipated minor shall be the domicile of the legal guardian of such unemancipated minor unless there are circumstances indicating that such guardianship was created primarily for the purpose of conferring a Virginia domicile on the unemancipated minor.

D. It is incumbent on the student to apply for change in domiciliary status on becoming eligible for such change. Changes in domiciliary status shall only be granted prospectively from the date such application is received.

A student who knowingly provides erroneous information in an attempt to evade payment of out-of-state fees shall be charged out-of-state tuition fees for each term, semester or quarter attended and may be subject to dismissal from the institution. All disputes related to the veracity of information provided to establish Virginia domicile shall be appealable through the due process procedure required by paragraph H below.

E. A nonmilitary student whose parent or spouse is a member of the armed forces may establish domicile in the same manner as any other student. However, a nonmilitary student, not otherwise eligible for in-state tuition, whose parent or spouse is a member of the military stationed or residing in the Commonwealth pursuant to military orders and claiming a state other than Virginia on their State of Legal Residence Certificate, shall be entitled to in-state charges when the following conditions are met: (i) if the student is a child of a member of the armed forces, then the nonmilitary parent shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition charges, resided in Virginia, been employed full time and paid individual income taxes to Virginia. Such student shall be eligible for in-state tuition charges only if the nonmilitary parent claims him as a dependent for Virginia and Federal income tax purposes; or (ii) if the student is the spouse of a member of the armed forces, then such student shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition, resided in Virginia, been employed full time and paid individual income taxes to Virginia. Any student whose spouse or parent is a member of the armed forces shall be eligible for in-state tuition charges for so long as these conditions continue to be met.

F. Students who live outside this Commonwealth and have been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement for in-state tuition shall be eligible for in-state tuition charges if such student has paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Students claimed as dependents for federal and Virginia income tax purposes who live outside this Commonwealth shall become eligible for in-state tuition charges if the nonresident parent claiming him as a dependent has been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement and paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Such students shall continue to be eligible for in-state tuition charges for so long as they or their qualifying parent are employed full time in Virginia, paying Virginia income taxes on all taxable income earned in this Commonwealth and the student is claimed as a
dependent for Virginia and federal income tax purposes.

G. Public institutions of higher education may enter into special arrangement contracts with Virginia employers or authorities controlling federal installations or agencies located in Virginia. The special arrangement contracts shall be for the purpose of providing reduced rate tuition charges for the employees of the Virginia employers or federal personnel when the employers or federal authorities are assuming the liability for paying the tuition for the employees or personnel in question and the employees or personnel are classified by the requirements of this section as out-of-state.

All special arrangement contracts with authorities controlling federal installations or agencies shall be to provide group instruction in facilities provided by the installation or agency.

Special arrangement contracts with Virginia employers may be for group instruction in facilities provided by the employer or in the institution's facilities or on a student by student basis for specific employment-related programs.

Special arrangement contracts shall be valid for one year and shall be reviewed for legal sufficiency by the Office of the Attorney General prior to signing. All rates agreed to by the public institutions shall be at least equal to in-state tuition and shall only be granted by the institution with which the employer or the federal authorities have a valid contract for students for whom the employer or federal authorities are paying the tuition charges.

All such contracts shall be registered with the State Council of Higher Education to assure accurate tabulation of the domiciles of the students.

H. Each public institution of higher education shall establish an appeals process for those students who are aggrieved by decisions on eligibility for in-state tuition charges. The Administration Process Act (§§9-6.14:1 et seq.) shall not apply to these administrative reviews.

An initial determination shall be made. Each appeals process shall include an intermediate review of the initial determination and a final administrative review. The final administrative decision shall be in writing. A copy of this decision shall be sent to the student. Either the intermediate review or the final administrative review shall be conducted by an appeals committee consisting of an odd number of members. No person who serves at one level of this appeals process shall be eligible to serve at any other level of this review. All such due process procedures shall be in writing and shall include time limitations in order to provide for orderly and timely resolutions of all disputes.

Any party aggrieved by a final administrative decision shall have the right to review in the circuit court for the jurisdiction in which the relevant institution is located. A petition for review of the final administrative decision shall be filed within thirty days of receiving the written decision. In any such action, the institution shall forward the record to the court, whose function shall be only to determine whether the decision reached by the institution could reasonably be said, on the basis of the record, to be supported by substantial evidence and not to be arbitrary, capricious or otherwise contrary to law.

I. In order to ensure the application of uniform criteria in administering this section and determining eligibility for in-state tuition charges, the State Council of Higher Education shall issue and from time to time revise guidelines, including a domiciliary status form to be incorporated by all state institutions of higher education in their admissions applications. These guidelines shall not be subject to the Administrative Process Act (§§ 9-6.14:1 et seq.) of this Code.

An advisory committee, composed of ten representatives of the public institutions, shall be appointed by the Council each year to cooperate with the Council in developing the guidelines for determining eligibility or revisions thereof. The Council shall consult with the Office of Attorney General and provide opportunity for public comment prior to issuing any such guidelines.

The first set of such guidelines shall be issued by September 1, 1984.

2. That § 23-7 of the Code of Virginia is repealed.

3. That if any clause, sentence, paragraph, subdivision, section or part of this act shall be adjudged by any court of competent jurisdiction to be invalid, the judgment shall not affect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part thereof directly involved in the controversy in which the judgment shall have been rendered.
School of Law

The School of Law is located in Arlington, Virginia, on the Metro Campus, convenient to Washington and easily accessible by public transportation. It offers educational programs leading to the first professional degree in law, the Juris Doctor. Through a stimulating instructional program, the School affords its students a sound curriculum responsive to contemporary demands. The School of Law is provisionally approved by the American Bar Association and was placed on the list by action of the House of Delegates, American Bar Association, on August 6, 1980.

In the first two years the curriculum provides the basic skills and knowledge required to meet the challenge of the third-year emphasis on the array of problems for legal analysis. The various social, economic, business and financial implications of problems with a legal aspect are explored both extensively and intensively.

For further information regarding the degree requirements and application procedures, please see the law catalog or contact the School of Law directly at: George Mason University Law School, Office of Admissions, 3401 North Fairfax Drive, Arlington, VA 22201.

Visiting the Campuses

Visitors are always welcome at the University, and prospective students are especially encouraged to visit the campuses, preferably while the University is in session. Administrative offices are open Monday through Friday, but because hours vary, it is best to make appointments.

Enforced parking regulations are in effect Monday through Friday from 7:30 a.m. to 5:30 p.m. Visits to the campuses during these times require a special parking permit. Special parking places are also provided for disabled persons. Parking permits and assistance in parking are available at each campus through the University Parking and Traffic Office. University buildings are fully accessible to persons in wheelchairs, except as noted below.
Campus Map Legend

1. Finley Building
   (First floor accessible to wheelchairs)
   Admissions (Undergraduate and Graduate)
   Affirmative Action
   Board of Visitors
   George Mason Institute
   Graduate School
   Office of Research
   Information/Switchboard
   President
   Public Relations Services
   Senior Vice President
   University Activities
   University Relations
   Vice President, Academic Affairs
   Vice President, Business and Finance

2. Krug Hall
   (Ground and first floors only accessible to wheelchairs)
   Chemistry Department

3. West Building
   (Ground and first floors only accessible to wheelchairs)
   Physics Department

4. East Building
   (First floor only accessible to wheelchairs)
   BIS/MAIS Degree Programs
   Consortium
   Dean, Continuing Education
   Extended Studies Enrollment
   In-Service Education Coordinator
   Off-Campus Coordination
   Public Service
   Summer Session

5. Fenwick Library
   Main Library Entrance
   Facilities Planning
   Library Collections and Services
   Library Offices
   Media Services Center
   Special Collections and Archives
   South Entrance
   Center for Historical Studies
   Design and Publications
   Government, Society, and the Arts Center
   History Department
   Philosophy and Religion Department
   Social Work Department

6. Lecture Hall

7. University Traffic and Parking Office

8. Thompson Hall
   Center for Interactive Management
   Communication
   Computer Science and Information Systems
   Dean, Arts and Sciences
   Duplicating Services
   ELI Faculty
   Foreign Languages and Literatures Department
   Institute for Information Technology
   Media Services (distribution)
   PACE (Plan for Alternate General Education)
   System Engineering Department
   University Computing Services
   WGMU

9. Administrative Offices (Modular)
   Accounting and Payroll
   Cashier
   Comptroller
   Credit Union
   Payroll Offices
   Personnel
   Registrar
   Registration Site
   Student Accounts

10. Greenhouse

11. Student Union
   Academic Advising Center
   Academic Testing
   Arts and Crafts Center
   Bank
   Broadside (student newspaper)
   By George? (yearbook)
   Cafeteria (fast food)
   Campus Ministry
   Career Services
   Cooperative Education
   Counseling Center
   Financial Aid
   Honor Committee
   International Programs and Services
   Minority Student Services
   Phoebe (Literary Magazine)
   Quick Copy Center
   Services for Disabled Students
   Student Activities
   Student Government
   Student Health
   Student Organizations
   Student Services
   Testing and Tutorial Services
   Veterans Affairs
   Vice President, Student Affairs
Index

Abbreviations, 182
Academic Calendar, 13
Academic dismissal, 27
Academic load
  full-time, part-time, 25
Academic testing, 21
Accounting courses (ACCT), 58
Accreditation, 192
Adding a course, 25
Admission, 20
  change in field, 23
  international students, 21
  offer of, 22
  policy, 192
  readmission, 22
  requirements, 20
  second master's degree, 22
  Summer Session, 23
  termination of, 23
Advancement to candidacy, 31, 32
Advising, 24
Alcoholic beverages, 191
American Studies Courses (AMST), 179
Appeals, 28
Application for admission, 20
  deadlines, 20
  deferred, 22
  Application for degree
    doctoral, 33
    master's, 30
Applied Physics
  degree requirements, 149
Applied Physics, M.S., 149
Art History Courses (ARTH), 179
Art Studio Courses (ARTS), 179
Astronomy Course (ASTR), 150
Auditing a course, 26
Bicycles/Skateboards, 191
Bilingual/Multicultural Education, 95
Biology, department of
  courses (BIOL), 63
  faculty, 60
Biology, M.S., 61
  degree requirements, 61
Biology, Environmental-Public Policy, Ph.D., 61
Business Administration
  courses (ACCT), 59
  courses (BULE), 69
  courses (DESC), 69
  courses (FNAN), 69
  courses (MGMT), 70
  courses (MKTG), 71
  courses (REUD), 72
  faculty, 66
Business Administration, M.B.A., 67
  degree requirements, 67
Business Legal Studies courses (BULE), 69
Calendar, 13
Catalog, 11
  subject to change, 11
Center for Bilingual/Multicultural Teacher Preparation, 39
Center for Interactive Educational Technology, 39
Center for the Improvement of Productivity, 38
Center for the Study of Market Processes, 38
Center for Study of Public Choice, 38
Certificates, 175
Challenge of grade, 27
Change of grade, 27
Chemistry courses (CHEM), 180
Commencement
  doctoral degree recipients, 33
  master's degree recipients, 30
Communication courses (COMM), 180
Computer and Electronics Engineering, M.S., 73
  courses (ENGR), 74
  degree requirements, 74
Computer and Information Sciences, department of
  courses (CS), 80
  courses (INFS), 81
  faculty, 77
Computer Science, M.S., 77
  degree requirements, 78
Computer system, 37
Conflict Management, M.S., 83
  courses (CONF), 83
  degree requirements, 83
  faculty, 82
Course abbreviations, 186
Course numbering, 187
Courses at other institutions, 28
  permission, 24
Creative Writing, M.F.A., 115
Credit
  transfer of, 28
Decision Sciences courses (DESC), 69
Degree application
  doctoral, 33
  master's, 30
Degree requirements
  doctoral, 30
  master's, 28
Dismissal
  academic, 27
  Dissertation, doctoral, 32
Doctoral
  advancement to candidacy, 31, 32
  commencement exercises, 33
  degree application, 33
  degree requirements, 30
  dissertation, non-dissertation, 32
final examination, 32
guide for preparing dissertations and projects, 32
program of study, 31
research skill requirements, 31
residence, 31
supervisory committee, 31
time limit, 31
Domicile, legislation, 194
Dropping a course, 25
Drugs, 191
Economics, department of
courses (ECON), 87
Economics, M.A., 85
degree requirements, 86
Economics, Ph.D., 86
degree requirements, 86
Education, D.A.Ed., 101
Education, department of
courses (DAED), 107
courses (EDAS), 107
courses (EDCI), 107
courses (EDGC), 109
courses (EDRD), 110
courses (EDSE), 110
courses (EDUC), 103
faculty, 90
Education, M.Ed., 90
degree requirements
(in counseling), 98
(in administration and supervision), 97
(in elementary education), 92
(in reading), 96
(in secondary education), 92
(in special education), 100
general, 91
Educational centers, 38
Educational Child/Youth Study Center, 39
Electronics and Computer Engineering, 73
Electron microscope, 37
Elementary Education, 92
English, department of
courses (ENGL), 116
English, M.A., 114
degree requirements, 114
(linguistics), 115
English, M.F.A.
degree requirements, 115
Environmental Biology-Public Policy, Ph.D., 61
degree requirements, 62
Equal Opportunity/Affirmative Action, 193
Examinations, final
absence, special, 26
Extended Studies Enrollment, 23
Faculty Writing Project, 39
Federal Facilities, 39
Federal Theatre Project, 36
Fees
application, 20
doctoral degree
application, 33
graduation, 30,33
readmission, 22
special registration, 30,32,51
Summer Session, 23
Final examination policy, 26
Finance courses (FNAN), 69
Firearms, 191
Firearms, regulations, 191
Foreign language
requirement, master's, 29
Foreign Languages and Literatures, department of
courses (FRLN), 121
faculty, 120
Foreign Languages and Literatures, M.A., 120
degree requirements, 120
French courses (FREN), 121
Geographic and Cartographic Sciences, 123
courses (GECA), 124
faculty, 123
Geographic and Cartographic Sciences, M.S., 123
degree requirements, 124
Geology courses (GEOL), 182
George Mason Institute, 38
George Mason University, 8
history of, 9
George Mason University Press, 40
German courses (GERM), 122
Gerontology, certificate program, 176
Government and Politics courses (GOVT), 163
Grading system, 26
change of grade, 27
grade point average, 26
reports, 27
Graduate Faculty, 10
Graduate Council, 10
Graduate Management Admission Test (GMAT), 21
Graduate Record Examination (GRE), 21
Graduate School, 10
Graduate School Foreign Language Tests (GSFLT), 21
Graduation fee, 30,33
Guest Matriculant, 23
Guidance and counseling, 98
Harrison Mann collection, 37
Health and Physical Education, department of, 147
Health Education, 125
courses (HEAL), 126
faculty, 125
Health Education, M.Ed., 125

http://catalog.gmu.edu
<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>History, M.A.</td>
<td>127</td>
</tr>
<tr>
<td>degree requirements</td>
<td>128</td>
</tr>
<tr>
<td>History, department of courses (HIST)</td>
<td>129</td>
</tr>
<tr>
<td>faculty</td>
<td>127</td>
</tr>
<tr>
<td>History of George Mason University</td>
<td>9</td>
</tr>
<tr>
<td>History, department of courses (INFS)</td>
<td>81</td>
</tr>
<tr>
<td>Information Systems courses</td>
<td>79</td>
</tr>
<tr>
<td>Information Systems, M.S.</td>
<td>79</td>
</tr>
<tr>
<td>degree requirements</td>
<td>79</td>
</tr>
<tr>
<td>Information Technology, Ph.D.</td>
<td>132</td>
</tr>
<tr>
<td>degree requirements</td>
<td>132</td>
</tr>
<tr>
<td>Information Technology courses (INFT)</td>
<td>134</td>
</tr>
<tr>
<td>Information Technology courses (PHIL)</td>
<td>182</td>
</tr>
<tr>
<td>Information Technology courses (PHYS)</td>
<td>150</td>
</tr>
<tr>
<td>faculty</td>
<td>149</td>
</tr>
<tr>
<td>Identification card</td>
<td>24</td>
</tr>
<tr>
<td>In Progress Grade</td>
<td>27</td>
</tr>
<tr>
<td>incomplete grade</td>
<td>27</td>
</tr>
<tr>
<td>Information Systems courses</td>
<td>81</td>
</tr>
<tr>
<td>Information Systems, M.S.</td>
<td>79</td>
</tr>
<tr>
<td>degree requirements</td>
<td>79</td>
</tr>
<tr>
<td>Information Technology, Ph.D.</td>
<td>132</td>
</tr>
<tr>
<td>degree requirements</td>
<td>132</td>
</tr>
<tr>
<td>Information Technology courses (INFT)</td>
<td>134</td>
</tr>
<tr>
<td>Information Technology courses (PHIL)</td>
<td>182</td>
</tr>
<tr>
<td>Information Technology courses (PHYS)</td>
<td>150</td>
</tr>
<tr>
<td>faculty</td>
<td>149</td>
</tr>
<tr>
<td>Interdisciplinary Studies</td>
<td>135</td>
</tr>
<tr>
<td>degree requirements</td>
<td>135</td>
</tr>
<tr>
<td>(individualized)</td>
<td>136</td>
</tr>
<tr>
<td>(liberal studies)</td>
<td>135</td>
</tr>
<tr>
<td>faculty</td>
<td>135</td>
</tr>
<tr>
<td>individualized studies</td>
<td>136</td>
</tr>
<tr>
<td>liberal studies</td>
<td>135</td>
</tr>
<tr>
<td>master of arts (M.A.I.S.)</td>
<td>135</td>
</tr>
<tr>
<td>International students</td>
<td>21</td>
</tr>
<tr>
<td>Identification card</td>
<td>24</td>
</tr>
<tr>
<td>In Progress Grade</td>
<td>27</td>
</tr>
<tr>
<td>incomplete grade</td>
<td>27</td>
</tr>
<tr>
<td>Information Systems courses</td>
<td>81</td>
</tr>
<tr>
<td>Information Systems, M.S.</td>
<td>79</td>
</tr>
<tr>
<td>degree requirements</td>
<td>79</td>
</tr>
<tr>
<td>Information Technology, Ph.D.</td>
<td>132</td>
</tr>
<tr>
<td>degree requirements</td>
<td>132</td>
</tr>
<tr>
<td>Information Technology courses (INFT)</td>
<td>134</td>
</tr>
<tr>
<td>Information Technology courses (PHIL)</td>
<td>182</td>
</tr>
<tr>
<td>Information Technology courses (PHYS)</td>
<td>150</td>
</tr>
<tr>
<td>faculty</td>
<td>149</td>
</tr>
<tr>
<td>Interdisciplinary Studies</td>
<td>135</td>
</tr>
<tr>
<td>degree requirements</td>
<td>135</td>
</tr>
<tr>
<td>(individualized)</td>
<td>136</td>
</tr>
<tr>
<td>(liberal studies)</td>
<td>135</td>
</tr>
<tr>
<td>faculty</td>
<td>135</td>
</tr>
<tr>
<td>individualized studies</td>
<td>136</td>
</tr>
<tr>
<td>liberal studies</td>
<td>135</td>
</tr>
<tr>
<td>master of arts (M.A.I.S.)</td>
<td>135</td>
</tr>
<tr>
<td>International students</td>
<td>21</td>
</tr>
<tr>
<td>Test of English as a Foreign Language (TOEFL)</td>
<td>21</td>
</tr>
<tr>
<td>Law, School of</td>
<td>197</td>
</tr>
<tr>
<td>Libraries and special collections</td>
<td>36</td>
</tr>
<tr>
<td>Management courses (MGMT)</td>
<td>70</td>
</tr>
<tr>
<td>Marketing courses (MKTG)</td>
<td>71</td>
</tr>
<tr>
<td>Master of Education programs, M.Ed.</td>
<td>90</td>
</tr>
<tr>
<td>Master's commencement exercises</td>
<td>30</td>
</tr>
<tr>
<td>degree application</td>
<td>30</td>
</tr>
<tr>
<td>degree requirements</td>
<td>29</td>
</tr>
<tr>
<td>foreign language requirement</td>
<td>29</td>
</tr>
<tr>
<td>residence</td>
<td>29</td>
</tr>
<tr>
<td>thesis</td>
<td>30</td>
</tr>
<tr>
<td>time limit</td>
<td>29</td>
</tr>
<tr>
<td>transfer of credit</td>
<td>29</td>
</tr>
<tr>
<td>Mathematical Sciences, department of courses (MATH)</td>
<td>139</td>
</tr>
<tr>
<td>faculty</td>
<td>138</td>
</tr>
<tr>
<td>Mathematics, M.S.</td>
<td>138</td>
</tr>
<tr>
<td>degree requirements</td>
<td>138</td>
</tr>
<tr>
<td>Metro Campus Professional and Conference Center</td>
<td>40</td>
</tr>
<tr>
<td>Music, 140</td>
<td>140</td>
</tr>
<tr>
<td>courses (MUSI)</td>
<td>141</td>
</tr>
<tr>
<td>faculty</td>
<td>140</td>
</tr>
<tr>
<td>Music, M.A.</td>
<td>141</td>
</tr>
<tr>
<td>degree requirements</td>
<td>141</td>
</tr>
<tr>
<td>Non-degree status</td>
<td>20</td>
</tr>
<tr>
<td>Non-thesis option</td>
<td>29</td>
</tr>
<tr>
<td>Northern Virginia Writing Project, 39,96</td>
<td></td>
</tr>
<tr>
<td>Nursing, accreditation</td>
<td>192</td>
</tr>
<tr>
<td>Nursing, department of</td>
<td></td>
</tr>
<tr>
<td>certificate in international nursing</td>
<td>176</td>
</tr>
<tr>
<td>certificate in nursing administration at the middle management level</td>
<td>177</td>
</tr>
<tr>
<td>certificate in nursing education</td>
<td>177</td>
</tr>
<tr>
<td>courses (NURS)</td>
<td>144</td>
</tr>
<tr>
<td>faculty</td>
<td>143</td>
</tr>
<tr>
<td>Non-thesis option</td>
<td>29</td>
</tr>
<tr>
<td>Northern Virginia Writing Project, 39,96</td>
<td></td>
</tr>
<tr>
<td>Nursing, M.S., 143</td>
<td>144</td>
</tr>
<tr>
<td>degree requirements</td>
<td>144</td>
</tr>
<tr>
<td>Ollie Atkins photograph collection</td>
<td>37</td>
</tr>
<tr>
<td>Operations Research courses (OR), 172</td>
<td></td>
</tr>
<tr>
<td>Operations Research and Management Science, M.S., 169</td>
<td></td>
</tr>
<tr>
<td>degree requirements</td>
<td>170</td>
</tr>
<tr>
<td>Performing Arts</td>
<td></td>
</tr>
<tr>
<td>department of</td>
<td>140</td>
</tr>
<tr>
<td>Pets, 191</td>
<td></td>
</tr>
<tr>
<td>Philosophy and Religion courses (PHIL)</td>
<td>182</td>
</tr>
<tr>
<td>Physical Education courses</td>
<td>148</td>
</tr>
<tr>
<td>Physical Education, M.S.</td>
<td>147</td>
</tr>
<tr>
<td>degree requirements</td>
<td>147</td>
</tr>
<tr>
<td>Physics, department of</td>
<td></td>
</tr>
<tr>
<td>courses (PHYS)</td>
<td>150</td>
</tr>
<tr>
<td>faculty</td>
<td>149</td>
</tr>
<tr>
<td>Privacy of student information</td>
<td>24,192</td>
</tr>
<tr>
<td>Professional Center</td>
<td>40</td>
</tr>
<tr>
<td>Program of study</td>
<td>31</td>
</tr>
<tr>
<td>Programs, 11</td>
<td></td>
</tr>
<tr>
<td>Provisional status</td>
<td>20</td>
</tr>
<tr>
<td>change to degree</td>
<td>27</td>
</tr>
<tr>
<td>Psychology, department of courses (PSYC)</td>
<td>154</td>
</tr>
<tr>
<td>Psychology, M.A.</td>
<td>151</td>
</tr>
<tr>
<td>degree requirements</td>
<td>152</td>
</tr>
<tr>
<td>Psychology, Psy.D.</td>
<td>153</td>
</tr>
<tr>
<td>degree requirements</td>
<td>153</td>
</tr>
<tr>
<td>Public Administration</td>
<td>158</td>
</tr>
<tr>
<td>courses (PUAD)</td>
<td>163</td>
</tr>
<tr>
<td>degree requirements</td>
<td>159,161</td>
</tr>
<tr>
<td>faculty</td>
<td>158</td>
</tr>
<tr>
<td>Public Administration, D.P.A., 160</td>
<td></td>
</tr>
<tr>
<td>Public Administration, M.P.A., 159</td>
<td></td>
</tr>
<tr>
<td>degree requirements</td>
<td>159</td>
</tr>
<tr>
<td>Public Affairs course (PUAF)</td>
<td>163</td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
Public Affairs, department of, 123,159                    Transfer of credit, 28,29
Reading, 96                                           criteria for, 28
Readmission, 22                                       Visiting the campus, 197
Real Estate and Urban Development courses (REUD),      Vocational Education, 96
72                                                    William Scott papers, 37
Records maintenance and disposal, 22                  Withdrawal
Registration, 24                                       from a semester, 26
continuous, 24,30                                      voluntary, enforced, 26
thesis, 30                                             Writing Research Center, 39
Regulations, 191                                       Satisfactory performance, 27
Repeating a course, 26                                 Schedule of Classes
Request forms, 28                                      course approval form, 24
Research skill requirements, 30                        School Counseling, 99
Reserve graduate credit                                 School of Law, 197
by undergraduates, 25                                   Secondary Education, 92
Secondary Education Certification Program, 93          Smoking, 191
Sociology, department of                               Sociology, department of
courses (SOCI), 167                                    courses (SOCI), 167
faculty, 166                                           faculty, 166
Sociology, M.A., 166                                   degree requirements, 167
Solicitors and salesmen, 191                            Solicitors and salesmen, 191
Spanish courses (SPAN), 122                             Spanish courses (SPAN), 122
Special registration fee, 30,32,51                      Special registration fee, 30,32,51
Statistics courses (STAT), 172                         Statistics courses (STAT), 172
Student consumer information, 193                      Student consumer information, 193
Student information, 24                                Student information, 24
Student requests and appeals, 28                       Student requests and appeals, 28
Student visa, 21                                       Student visa, 21
Summer Session, 17,23,193                               Summer Session, 17,23,193
Supervisory committee, 31                              Supervisory committee, 31
Systems Engineering, department of, 169                Systems Engineering, department of, 169
faculty, 169                                           faculty, 169
Systems Engineering, M.S., 170                         Systems Engineering, M.S., 170
degree requirements, 171                               degree requirements, 171
Teacher Education Programs                             Teacher Education Programs
accreditation, NCATE, 192                              accreditation, NCATE, 192
Teaching of English as a Second Language (TESL)        Teaching of English as a Second Language (TESL)
certificate program, 176                                certificate program, 176
Termination of admission, 23                           Termination of admission, 23
Test of English as a Foreign Language (TOEFL), 21      Test of English as a Foreign Language (TOEFL), 21
Testing, 21                                            Testing, 21
Thesis, master’s, 30                                   Thesis, master’s, 30
Time limit                                            Time limit
doctoral, 31                                           doctoral, 31
master’s, 29                                           master’s, 29
Directory

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252 Student Union I

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