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).

Students, employees, or applicants for admission for 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 resolving the matter. Disabled students or applicants may also contact the Adviser to Disabled Students.

The Catalog

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, and admissions and graduation requirements, is subject to change without notice or obligation.
George Mason University

Contents

Programs of Study ........................................... 2
Academic Calendar 1988-1989 ............................. 5
Fall Semester 1988, 5
Spring Semester 1989, 7
Summer Session, 9
Testing Calendar, 9

Profile of George Mason University .................. 11
Student Life .................................................. 15
Student Support Services, 15
Student Activities, 17

Admission ..................................................... 21
Admission Policies, 21
Admission Procedures, 24

Tuition, Expenses, and Financial Aid ................ 28
Tuition and Fees, 28
Financial Aid, 30

Registration .................................................. 34

Academic Policies ........................................... 38
Academic Advising Policies, 38
Honor System and Code, 44

College of Arts and Sciences ............................. 48
American Studies, 52
Area Studies, 53
Art, 58
BA/SIC (Bachelor of Arts and Sciences Integrated Curriculum), 60
Biology, 61
Chemistry, 64
Classical Studies, 66
Communication, 67
Economics, 68
English, 69
Foreign Languages and Literatures, 71
Geology, 73
History, 74
Mathematical Sciences, 75
PAGE (Plan for Alternative General Education), 77
Performing Arts, 79
Philosophy and Religious Studies, 88
Physics, 90
Psychology, 91
Public Affairs, 93
Sociology and Anthropology, 96

School of Business Administration ...................... 99
Accounting and Business Legal Studies, 101
Decision Sciences, 102
Finance, 103
General Business Administration, 103
Management, 104
Marketing, 104

School of Information Technology and Engineering ...... 106
Computer Science, 107
Electrical and Computer Engineering, 109
Information Systems and Systems Engineering, 110
Operations Research and Applied Statistics, 111

School of Nursing ........................................... 113

College of Education and Human Services ............................. 116
Curriculum and Instruction, 117
Health, Sport, and Leisure Studies, 123
Social Work, 128

Division of Continuing Education ...................... 130

Certificates and University Courses ...................... 137
Certificate Programs, 137
University Courses, 142

Course Descriptions ...................................... 144
Glossary, 144
Course Numbering, 145
Courses, 146

General Policies ............................................ 219

Administration and Faculty .............................. 222
Board of Visitors, 222
Administration, 222
Faculty, 225

Campus Map, Telephone Directory, and Index ............. 247
Campus Map, 247
Telephone Directory, 248
Index, 249
Programs of Study

Undergraduate Degrees, Certificates, and Preprofessional Study

Existing or planned for 1988-89.

Undergraduate Degrees
Accounting B.S. (Accounting and Business Legal Studies)
American Studies B.A. (American Studies)
Anthropology B.A. (Sociology and Anthropology)
Area Studies B.A. (Area Studies)
Art B.A. (Art)
Biology B.A., B.S. (Biology)
Chemistry B.A., B.S. (Chemistry)
Classical Studies B.A. (Classical Studies)
Computer Science B.S. (Computer Science)
Dance B.A., B.F.A. (Performing Arts)
Decision Sciences B.S. (Decision Sciences)
Early Education B.S.Ed. (Curriculum and Instruction)
Economics B.A., B.S. (Economics)
Electronics Engineering B.S. (Electrical and Computer Engineering)
English B.A. (English)
Finance B.S. (Finance)
French B.A. (Foreign Languages and Literatures)
General Business Administration B.S. (School of Business Administration)
Geography B.A. (Public Affairs)
Geology B.S. (Geology)
German B.A. (Foreign Languages and Literatures)
Government and Politics B.A. (Public Affairs)
Health Education B.S.Ed. (Health, Sport, and Leisure Studies)
History B.A. (History)
Individualized Study B.I.S. (Division of Continuing Education)
International Studies B.A. (Public Affairs)
Law Enforcement B.S. (Public Affairs)
Management B.S. (Management)
Marketing B.S. (Marketing)
Mathematics B.A., B.S. (Mathematical Sciences)
Medical Technology B.S. (Biology)
Middle Education B.S.Ed. (Curriculum and Instruction)
Music B.A., B.M. (Performing Arts)
Nursing B.S.N. (School of Nursing)
Parks, Recreation, and Leisure Studies B.S. (Parks, Recreation, and Leisure Studies)
Philosophy B.A. (Philosophy and Religious Studies)
Physical Education B.S.Ed. (Health, Sport, and Leisure Studies)
Physics B.A., B.S. (Physics)
Psychology B.A., B.S. (Psychology)
Public Administration B.S. (Public Affairs)
Social Work B.S. (Social Work)
Sociology B.A. (Sociology and Anthropology)
Spanish B.A. (Foreign Languages and Literatures)
Speech Communication B.A. (Communication)

Systems Engineering B.S. (Information Systems and Systems Engineering)
Technology Education B.S.Ed. (Curriculum and Instruction)
Theatre B.A., B.F.A. (Performing Arts)

Certificate Programs
Applied Archaeology
Canadian Studies
Cartography
Earth Science Teaching
Environmental Management
Geochemistry
Geoscience Programming
Gerontology
Psychology Technician
Real Estate and Urban Development

Preprofessional Study
Predental
Predivinity
Prelaw
Premedical
Prepharmacy
Preveterinary

Graduate Degrees and Certificates

See the Graduate Catalog for complete information about admission to the Graduate School and descriptions of the programs listed here.

Graduate and Professional Degrees
Accounting M.S. (Accounting and Business Legal Studies)
Applied and Engineering Physics M.S. (Physics)
Biology M.S. (Biology)
Business Administration M.B.A. (School of Business Administration)
Chemistry M.S. (Chemistry)
Computer and Electronics Engineering M.S. (Electrical and Computer Engineering)
Conflict Management M.S. (Center for Conflict Analysis and Resolution)
Counseling and Development M.Ed. (Educational Leadership and Human Development)
Creative Writing M.F.A. (English)
Economics M.A., Ph.D. (Economics)
Education D.A.Ed. (Curriculum and Instruction)
Education Administration and Supervision M.Ed. (Educational Leadership and Human Development)
Elementary Education M.Ed. (Curriculum and Instruction)
English M.A. (English)
Environmental Biology and Public Policy Ph.D (Biology)
Foreign Languages M.A. (Foreign Languages and Literatures)
Geographic and Cartographic Sciences M.S. (Public Affairs)
Health Education M.Ed. (Health, Sport, and Leisure Studies)
History M.A. (History)
Information Systems M.S. (Information Systems and Systems Engineering)
Information Technology Ph.D. (School of Information Technology and Engineering)
Interdisciplinary Studies M.A.I.S. (Division of Continuing Education)
Law J.D. (School of Law)
Mathematics M.S. (Mathematics)
Music M.A. (Performing Arts)
Nursing M.S.N., D.N.Sc. (School of Nursing)
Physical Education M.S. (Health, Sport, and Leisure Studies)
Psychology M.A., Psy.D. (Psychology)
Public Administration M.P.A., D.P.A. (Public Affairs)
Reading M.Ed. (Curriculum and Instruction)
Secondary Education M.Ed. (Curriculum and Instruction)
Sociology M.A. (Sociology and Anthropology)
Special Education M.Ed. (Curriculum and Instruction)
Systems Engineering M.S., (Information Systems and Systems Engineering)

Certificate Programs
Gerontology
Information Management and Expert Systems
International Nursing
Nursing Administration
Nursing Education
Teaching of English as a Second Language
Academic Calendar, 1988-1989

Fall Semester 1988

(See below for National Testing Calendar)

**January 1**  
Last day for filing international student (immigrant status) undergraduate admissions applications for fall 1988.

**January 18-19**  
Foreign language placement test.

**February 1**  
Last day for filing freshman undergraduate admissions applications for fall 1988.

**February 15**  
Last day for filing Psy.D. admissions applications for fall 1988.

**March 1**  
Last day for filing D.N.Sc. admissions applications for fall 1988.

**March 7**  
Music major auditions (by appointment).

**March 15**  
Last day for filing transfer undergraduate admissions applications for fall 1988.

**March 21-23, March 29-31**  
Foreign language placement test.

**April 1**  
Last day for filing Graduate School fellowship applications for doctoral students, Ph.D. Economics and D.P.A. Public Administration admissions applications for fall 1988.

**April 4**  
Music major auditions (by appointment).

**April 4-7**  
Foreign language placement test.

**April 7**  
University Day.

**April 8**  
Dance major auditions (by appointment).

**April 12-14**  

**May 1**  
Last day for filing master's and Ph.D. Information Technology admissions applications for fall 1988.

**May 1**  
Last day for filing Graduate School fellowship applications for master's students.

**May 2**  
Music major auditions (by appointment).

**May 23-25**  
Foreign language placement test.

**June 13**  
Music major auditions (by appointment).

**June 13-17**  
Foreign language placement test.

**June 13-17, June 20-24**  
Orientation programs and placement testing for undergraduates; early registration for certain newly admitted students (by invitation only).

**June 15**  
Last day to apply for acceptance into communication major for fall 1988.

**June 20-24**  
Foreign language placement test.

**July 1**  
Art portfolio reviews (by appointment).

**July 1**  
Last day to apply for acceptance to the School of Business Administration for fall 1988.

**July 4**  
Independence Day observed; University closed.

**July 5**  
Music major auditions (by appointment).

**July 11-15**  
Orientation program and early registration for certain newly admitted students (by invitation only).

**July 11-15**  
Foreign language placement test.

**July 15**  
Last day for mail-in/hand-in registration for fall. Registration in person continues by priority groups.

**July 15**  
Master's theses and doctoral dissertations due in office of the Graduate Dean for August graduation.

**July 18-22**  
Orientation program and early registration for certain newly admitted students (by invitation only).
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 18</td>
<td>Start counseling for fall extended studies enrollees. Call for appoint-</td>
</tr>
<tr>
<td></td>
<td>ment on or after July 5.</td>
</tr>
<tr>
<td>July 18-22</td>
<td>Foreign language placement test.</td>
</tr>
<tr>
<td>July 25-29</td>
<td>Orientation program and early registration for certain newly admitted</td>
</tr>
<tr>
<td></td>
<td>students (by invitation only).</td>
</tr>
<tr>
<td>August 4</td>
<td>Tuition and fees due for early registered students (payment with late</td>
</tr>
<tr>
<td></td>
<td>fee will be received until August 11).</td>
</tr>
<tr>
<td>August 12</td>
<td>Fall registrations canceled for early registered students who have not</td>
</tr>
<tr>
<td></td>
<td>made arrangements for payment with cashier (canceled students who do</td>
</tr>
<tr>
<td></td>
<td>not reregister for fall classes are assessed a $20 administrative fee).</td>
</tr>
<tr>
<td>August 19</td>
<td>BIOL 124-125 examination for nurses.</td>
</tr>
<tr>
<td>August 24-25</td>
<td>Registration and adjustment (for times and priorities see Schedule of</td>
</tr>
<tr>
<td></td>
<td>Classes).</td>
</tr>
<tr>
<td>August 22</td>
<td>Music competency placement tests (by appointment).</td>
</tr>
<tr>
<td>August 22-25</td>
<td>Choral auditions (by appointment).</td>
</tr>
<tr>
<td>August 22</td>
<td>Art portfolio review for art majors (by appointment).</td>
</tr>
<tr>
<td>August 22-23</td>
<td>Welcoming days, orientation programs for new faculty and for certain</td>
</tr>
<tr>
<td></td>
<td>newly admitted students (by invitation only).</td>
</tr>
<tr>
<td>August 22-26</td>
<td>Foreign language placement test.</td>
</tr>
<tr>
<td>August 22 &amp; 24</td>
<td>Music major auditions (by appoint-</td>
</tr>
<tr>
<td>August 29</td>
<td>Symphony Band auditions (by appointment).</td>
</tr>
<tr>
<td>August 29</td>
<td>First day of classes.</td>
</tr>
<tr>
<td>August 30</td>
<td>Symphony Orchestra auditions (by appointment).</td>
</tr>
<tr>
<td>August 31</td>
<td>Jazz Ensemble auditions (by appointment).</td>
</tr>
<tr>
<td>September 5</td>
<td>Labor Day; University closed.</td>
</tr>
<tr>
<td>September 6</td>
<td>Last day for a full tuition refund (less $20 fee).</td>
</tr>
<tr>
<td>September 7</td>
<td>Second deferred tuition payment due.</td>
</tr>
<tr>
<td>September 8-28</td>
<td>Pick up winter bachelor's, master's and doctoral degree and certificate applications at the Office of the Registrar (application must be completed and returned with fee no later than September 28).</td>
</tr>
<tr>
<td>September 13</td>
<td>Last day for schedule adjustment for fall classes.</td>
</tr>
<tr>
<td>September 13</td>
<td>Last day for a partial tuition refund, second week.</td>
</tr>
<tr>
<td>September 20</td>
<td>Last day for partial tuition refund, third and final week.</td>
</tr>
<tr>
<td>September 23</td>
<td>Patriots Day.</td>
</tr>
<tr>
<td>October 1</td>
<td>Last day to apply for acceptance to the School of Business Administra-</td>
</tr>
<tr>
<td></td>
<td>tion for spring 1989.</td>
</tr>
<tr>
<td>October 1</td>
<td>Last day for filing Ph.D. Economics admissions applications for spring</td>
</tr>
<tr>
<td></td>
<td>1989.</td>
</tr>
<tr>
<td>October 5</td>
<td>Third deferred tuition payment due.</td>
</tr>
<tr>
<td>October 9-11</td>
<td>Recess (Note: Monday classes and laboratories meet on Wednesday this</td>
</tr>
<tr>
<td></td>
<td>week only).</td>
</tr>
<tr>
<td>October 12</td>
<td>Monday classes and laboratories meet on Wednesday at Monday scheduled</td>
</tr>
<tr>
<td></td>
<td>times and places. Wednesday scheduled classes and laboratories do not</td>
</tr>
<tr>
<td></td>
<td>meet this week.</td>
</tr>
<tr>
<td>October 25</td>
<td>Spring Semester Schedule of Classes (registration calendar) distributed.</td>
</tr>
<tr>
<td>October 25-31</td>
<td>Foreign language placement test.</td>
</tr>
<tr>
<td>October 28-December 9</td>
<td>Mail-in/hand-in registration for designated categories of students. For times and priorities, see Schedule of Classes.</td>
</tr>
<tr>
<td>November 1</td>
<td>Last day for financial aid applications for spring 1989.</td>
</tr>
<tr>
<td>November 1</td>
<td>Last day for filing master's, Ph.D. Biology, and Ph.D. Information</td>
</tr>
<tr>
<td></td>
<td>Technology admissions applications for spring 1989.</td>
</tr>
<tr>
<td>November 2-4</td>
<td>Foreign language placement test.</td>
</tr>
<tr>
<td>November 4</td>
<td>Dance major auditions (by appointment).</td>
</tr>
<tr>
<td>November 7</td>
<td>Art portfolio reviews (by appointment).</td>
</tr>
</tbody>
</table>
Spring Semester 1989

January 1  
Last day for filing international student (non-immigrant status) undergraduate admissions applications for fall 1989.

January 6  
BIOL 124-125 examinations for nurses.

January 6  
Spring registrations canceled for early registered students who have not made arrangements for payment with cashier (canceled students who do not reregister for spring are assessed a $20 administrative fee).

January 16  
Art portfolio reviews (by appointment).

January 16  
Music competency placement tests (by appointment).

January 16  
Music major auditions (by appointment).

January 16-17  
Foreign language placement testing for undergraduates.

January 16-17  
Welcoming days; orientation programs and early registration for new undergraduates.

January 16-19  
Choral auditions (by appointment).

January 17-18  
Registration and schedule adjustment (for times and priorities and snow alternatives see Schedule of Classes).

January 23  
Symphony Band auditions (by appointment).

January 23  
First day of classes.

January 24  
Symphony Orchestra auditions (by appointment).

January 25  
Jazz Ensemble auditions (by appointment).

January 30  
Last day for a full tuition refund (less $20 fee).

February 1  
Last day for filing freshman undergraduate admissions applications for fall 1989.

November 7  
Music major auditions (by appointment).

November 9  
Foreign language placement test.

November 14  
Start counseling for spring extended studies enrollees. Call for appointment on or after November 1.

November 15  
Master's theses and doctoral dissertations due in Office of the Graduate Dean for January graduation.

November 15  
Deadline for application for junior standing in nursing for spring semester.

November 17 & 22  
Foreign language placement test.

November 24-27  
Thanksgiving recess; University closed.

December 1  
Last day for filing undergraduate admissions applications for spring 1989.

December 1  
Orientation and registration for new undergraduates (by invitation).

December 1  
Foreign language placement test.

December 9  
Last day for mail-in/hand-in registration for spring 1989. Registration in person continues by priority groups.

December 10  
Last day of classes.

December 15  
Last day to apply for acceptance into communication major for spring 1989.

December 19  
Tuition and fees due for early registered students. Payment with late fee will be accepted by mail if received by January 5 (but University offices will be closed December 24 - January 2).

December 19-19  
Examinations (for times, see Schedule of Classes).

December 15  
Early registration begins.

January 5  
Last day for payment with late fee for early registered students for spring.
February 1  Last recommended date for new students filing the Financial Aid Form (FAF) for fall 1989.

February 1  Last day to apply for acceptance to the School of Business Administration for fall 1989.

February 1  Last day for filing D.A.Ed. admissions applications for fall 1989.

February 6  Last day for schedule adjustment for spring classes.

February 6  Last day for partial tuition refund, second week.

February 8-28  Pick up spring bachelor’s, master’s and doctoral degree and certificate applications at Office of the Registrar. (Application must be completed and returned with fee no later than February 28.)

February 13  Last day for a partial tuition refund, third and final week.

February 15  Second deferred tuition payment due.

February 15  Last day for filing Psy.D. admissions applications for fall 1989.

March 1  Last day for filing master’s admissions applications for summer session.

March 1  Last day for filing the Financial Aid Form (FAF) for transfer students for fall 1989.

March 1  Last day for filing D.N.Sc. Nursing admissions applications for fall 1989.

March 3  Summer schedule of classes distributed.

March 8-28  Pick up summer bachelor’s degree applications at Office of the Registrar (applications must be completed and returned with fees no later than March 28).

March 8-28  Pick up summer master’s and doctoral degree applications at the Office of the Registrar (applications must be completed and returned with fee no later than April 28.)

March 12-19  Mid-semester recess.

March 13  Summer registration begins.

March 15  Third deferred tuition payment due.

March 15  Last day for filing transfer undergraduate admissions applications for fall 1989.

March 15  Deadline for application for junior standing in nursing for fall 1988.

March 20-24  Foreign language placement test.

March 25  Fall Semester Schedule of Classes distributed.

March 29-July 15  Mail-in/hand-in registration for designated categories of students. For times and priorities, see Schedule of Classes.

March 31  Art portfolio reviews (by appointment).

March 31  Master’s theses and doctoral dissertations due in Office of the Graduate Dean for May graduation.

April 1  Deadline for financial aid applications for summer 1989.

April 1  Last recommended date for filing the Financial Aid Form (FAF) for returning upperclassmen, fall 1989.

April 1  Last day for filing D.P.A. Public Administration, Ph.D. Biology, and Ph.D. Economics admissions applications for fall 1989.

April 1  Last day for filing Graduate School fellowship applications for doctoral students.

April 3  Music major auditions (by appointment).

April 3, 6, 10, 19, 27  Foreign language placement test.

April 7  University Day.

April 14  Dance major auditions (by appointment).

April 21  Mason Day.

May 1  Last day for upperclassmen to submit completed financial aid requirements for priority consideration of aid for fall 1988.

May 1  Last day for filing master's and Ph.D. Information Technology admissions applications for fall 1989.

May 1  Last day for filing Graduate School fellowship applications for master's students.

May 6  Last day of classes.

May 8  Music major auditions (by appointment).

May 8-15  Examinations (for times and snow day make-up, see Schedule of Classes).
May 20
Spring commencement.

May 23-25
Foreign language placement testing for undergraduates.

May 29
Memorial Day observed; University closed.

May 30
Summer Session begins.

June 2
Last day for filing EXCEL admissions application.

June 12-16 and June 26-30
Orientation and registration for new undergraduates (by invitation).

June 15
Last day to apply for acceptance into communication major for fall 1989.

June 19-23
Foreign language placement testing for undergraduates.

Summer Session

Summer Session consists of several terms, ranging in length from five to eight weeks, during the period May 30 through August 5. Classes are offered during both day and evening hours. For details, consult the Summer Session Catalog, which will be available in early March.

Testing Calendar

On-Campus Testing Calendar for 1988-89.

<table>
<thead>
<tr>
<th>Test</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMAT</td>
<td>10/18; 1/24; 3/21</td>
</tr>
<tr>
<td>GRE</td>
<td>10/11; 12/13; 2/7; 4/11</td>
</tr>
<tr>
<td>LSAT</td>
<td>9/27; 12/26</td>
</tr>
<tr>
<td>MAT</td>
<td>Monthly</td>
</tr>
<tr>
<td>MCAT</td>
<td>9/13; 4/25</td>
</tr>
<tr>
<td>National Teacher Examination</td>
<td>7/12; 10/25; 11/8; 3/7;</td>
</tr>
<tr>
<td>PEP</td>
<td>Monthly</td>
</tr>
<tr>
<td>TOEFL</td>
<td>7/11; 8/2; 8/5; 9/19; 10/25; 11/15; 12/12; 1/10; 2/13; 3/12; 4/10</td>
</tr>
</tbody>
</table>
Profile of George Mason University
Profile of George Mason University

George Mason University is a dynamic, forward-looking institution that provides a diverse and interactive curriculum to educate students for life in a rapidly changing, highly technical world. George Mason, a medium-sized state university, is in Northern Virginia, convenient to all the resources of the nation's capital and the greater Washington, D.C., metropolitan area.

Both George Mason and its surrounding Fairfax County have experienced phenomenal development over the past several years. From its origins in 1957 as a two-year branch of the University of Virginia, George Mason has grown into a comprehensive institution offering degrees through the doctoral level. From a rural suburb of Washington, D.C., Fairfax County has developed into a center of high technology enterprise, promising to rival the West Coast's Silicon Valley and the Boston area's Route 128 corridor.

The University's leadership has carefully planned curricular emphases to make the best use of the area's resources in high technology, the arts and humanities, and public affairs. George Mason's programs are an integral part of its Northern Virginia locale, giving to and receiving from the community in both service and intellectual interchange. The University also participates fully in the national and international exchange of ideas and knowledge.

The University's growing stature and reputation are exemplified by the presence of Virginia's first Nobel laureate, economist James Buchanan. The George Mason professor won the 1986 Nobel Prize in economics for his public choice theory of political decision making. Buchanan is executive director of the University's Center for Study of Public Choice, which applies scientific economic methods to the "public choice behavior" of voters, party leaders, and other politicians, lobbyists, and bureaucrats. This center and 35 other GMU centers and institutes enhance University scholarship and contribute, both directly and indirectly, to the intellectual growth of the George Mason student.

Location
Situated on 583 wooded acres near the city of Fairfax, the University's Main Campus combines the quiet of a suburban setting with accessibility to Washington's libraries, galleries, and museums; Virginia's historic sites; and Fairfax County's high technology firms. A modern subway is convenient to the campus, taking riders to the U.S. Capitol in 35 minutes. It also provides a quick ride to GMU's 10-acre Metro Campus in Arlington, Virginia, which houses the law school and a professional and conference center. The subway and major highways also connect with suburban centers in Virginia and nearby Maryland.

Programs
The University's main academic divisions are the College of Arts and Sciences, College of Education and Human Services, School of Business Administration, School of Information Technology and Engineering, School of Nursing, Graduate School, School of Law, and Division of Continuing Education. GMU offers a total of 96 degree programs, including 56 undergraduate, 32 master's, 7 doctoral, and a juris doctor degree.

Academic departments provide innovative and distinctive programs. For example, the University's Plan for Alternative General Education (PAGE), an integrated interdisciplinary program, received the 1986 Theodore Mitan Award for Innovation and Change in Higher Education from the American Association of State Colleges and Universities. The George Mason English Department, with several noted writers on its faculty, is establishing a national reputation. Its seminars and workshops attract many internationally known authors as workshop leaders and seminar speakers.

Students
The majority of the University's more than 18,000 students are from Virginia, with the other 49 states and 81 foreign countries well represented in the student body. While full-time undergraduates, 18 to 24 years in age, make up the largest student group, part-time graduate and undergraduate students, 25 and up, are growing in numbers. George Mason welcomes qualified students with a wide range of interests and backgrounds. Its diverse student body is a microcosm of modern society.

Faculty
Included among the University's 519 full-time instructional faculty members are experts in a broad variety of fields who have published widely, contributed to major research findings, and consulted with government and business. Besides a Nobel laureate, the faculty numbers winners of awards from the Guggenheim Foundation and the National Endowments for the Arts and for the Humanities, as well as winners of Fulbright Awards and Mellon Fellowships.

Of particular interest to undergraduates are the University's Robinson Professors. These are outstanding scholars in the liberal arts and sciences who have come to George Mason from prestigious positions elsewhere. They are concerned with broad and fundamental intellectual issues, and are dedicated to undergraduate teaching. The Schedule of Classes printed every semester gives details about courses being taught by Robinson Professors.

http://catalog.gmu.edu
Campus Facilities
George Mason has matched its rapid development with a carefully planned building program. Its 29 academic facilities include modern classroom buildings and state-of-the-art scientific laboratories and computer centers supporting student class work and faculty research.

Extensive computing facilities are available to students. Several state-of-the-art mainframe computers including Digital VAX 8800 and 8530 systems provide large-scale, contemporary software environments. Several hundred microcomputers (primarily IBM PC and AT compatibles) and terminals are available for student use in general purpose computer laboratories around campus, in the library, in dormitories, and in other key locations, providing access to a variety of microcomputer-based software and to the mainframes. Additional computing facilities, used for special applications such as artificial intelligence, computer graphics, elementary and secondary teacher education, library searching, and English composition are also available. George Mason University allows ready access to computing throughout the campus by means of MasoNet, a broadband and ethernet local area communications network. All academic buildings are linked to the central Computer Center through MasoNet, and a student with the capability at home can dial-in to the network.

Automation also aids students using the University's library facilities. The five-story Fenwick Library is a leader in the field of applying computerized automation to library functions and services. It provides microcomputer-based access to more than 300 data bases of interest to researchers in all fields. Combined University library facilities, including Fenwick Library on the Main Campus and the Law Library on the Metro Campus, house collections of approximately 760,000 volumes and annual added volumes of 20,000 books and 4,000 periodicals. In addition, the library is a member of the Consortium of Universities of the Washington Metropolitan Area, providing direct borrowing privileges at other universities.

A new Science and Technology Building recently opened on the Main Campus, and the first phase of a new Arts Center will be completed during the 1988-89 year. A 2,000-seat concert hall planned for the Arts Center will augment the existing Harris Theatre, expanding the range of performing arts presentations on campus.

The opening in 1985 of the Patriot Center, a 10,000-seat sports and entertainment arena, provided a spacious new home for George Mason's major campus and varsity athletic activities and benefited the larger Northern Virginia community. The center is designed for basketball, indoor soccer, concerts, and other sports and entertainment events as well as large convocations such as the annual commencement ceremonies.

Also recently opened, the University's multipurpose Sports and Recreation Complex features 64,000 square feet of space indoors, including a 200-meter track; multiple basketball, tennis, handball/racquetball, and volleyball courts; a baseball and softball diamond and batting cage; a weight room; saunas; and golf and archery nets. Outdoor features include a 400-meter track, a baseball diamond, and soccer and other playing fields.

The University's 18 dormitory buildings house more than 1,700 students. A variety of dining facilities, meeting rooms, a bank, the campus bookstore, and other student services are available in George Mason's two student unions.

Metro Campus Professional Center. The Metro Campus Professional Center is in Arlington on the third floor of the Metro Campus, 3401 North Fairfax Drive, adjacent to the Virginia Square-GMU Metro Station (Orange Line).

The center offers both graduate and undergraduate courses, including several liberal arts undergraduate classes. Most credit courses are taught in convenient one-per-week sessions, with beginning times of 4:30, 6:00, and 7:20 p.m. Non-credit courses are scheduled from 8:00 a.m. to 4:00 p.m. Approximately 175 non-credit courses are taught in the Professional Center. More than 4,000 credit and non-credit students are served.

The 200-seat Conference Center hosts an additional 30,000 persons annually, who participate in University and community programs and business and professional conferences. The Metro Gallery holds 12 professional art shows annually and is the site of many community cultural events.

The GMU Information Center on the Kirkwood Drive side of the building provides University publications and information on programs and activities at both campuses, including catalogs and applications. The Information Center is open from 9:00 a.m. to 9:00 p.m. weekdays. The telephone number is (703) 841-2604.

Professional Programs and Activities
School of Law. The School of Law is at the Metro Campus in Arlington, 15 minutes from downtown Washington via the orange Metrorail line. The school offers programs leading to the first professional degree in law, the juris doctor. Full-time faculty members teach most courses in both the day and evening divisions. The school is fully accredited by the American Bar Association.

The curriculum provides the basic knowledge and skills necessary for practice in any state. Many courses are problem oriented or involve extensive writing. The faculty includes perhaps the largest concentration of law and economics scholars in the United States.

The School of Law is phasing in an innovative series of specialty tracks, allowing students to develop in-depth knowledge of an area of practice beginning with the onset of legal education. The specialty in patents begins in fall 1988, and track programs in corporate and securities law and in banking and financial services begin in fall 1989. A track in real estate finance is also planned.

For further information, please see the law catalog or write or call George Mason University School of Law, Admissions Office, 3401 N. Fairfax Drive, Arlington, VA 22201-4498; (703) 841-2640.
George Mason University Press. Under the guidance and administration of the Graduate School, the George Mason University Press was established in April 1983 to provide a scholarly publishing dimension in the overall mission of the University to create and disseminate knowledge through teaching, research, and publication. Administered by a director under the supervision of a faculty editorial board, the GMU Press welcomes manuscripts in all areas of scholarship and seeks to publish monographs, books, research reports, conference proceedings, symposia, or reference works developed by local faculty and by authors throughout the world of scholarly endeavor. Among its publications, the Press issues the annual series of lectures presented on The Legacy of George Mason. GMU Press books are advertised, exhibited, promoted, and sold worldwide by its exclusive agent, University Publishing Associates.

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, appointments are suggested.

Parking regulations are enforced 24 hours a day, seven days a week. Parking on campus is by permit or decal only Monday through Friday from 7:00 a.m. to 10:00 p.m. Decals are not required on weekends. Special parking places are provided for disabled persons. Parking permits and assistance in parking are available at both campuses through the University Parking and Traffic Office.

Accreditation
George Mason University is fully accredited by the Southern Association of Colleges and Schools.
Student Life
Student Life

Student Support Services

George Mason University provides many support services designed to enhance the college experience and enable students to take full advantage of the University's educational and personal enrichment opportunities.

Student Unions

The two student unions are the center for most nonacademic activities. Student Union I houses offices of student service coordinators and student organization offices, as well as a large lounge area, an arts and crafts center, a mini-mall, a game room, a bank, a rathskellar, and food services. In Student Union II are a bookstore, cash and contract cafeterias, and meeting rooms.

Other Recreational Facilities

The Patriot Center, a 10,000-seat arena completed in 1985, is home to the University's varsity sports, as well as a center of activity for Northern Virginia. Large gatherings such as commencement are held there, as are community activities and recreational events. Among events that took place in the Patriot Center in 1987 were the McDonald's American Cup Gymnastics, Virginia Slims of Washington tennis tournament, and the Kenny Rogers concert.

The Harris Theatre houses smaller-scale events and performing arts activities. In addition to concerts and plays staged by the University companies, each year an International Arts Festival featuring professional performers is held in the theatre.

Facilities of the Sports and Recreation Complex are available free to University students. These include indoor and outdoor tracks and playing fields, a weight room and sauna, and other sports facilities.

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 1987-88 included blood pressure checks, Pap testing, and cardiopulmonary resuscitation instruction.

The staff includes a director, one full-time nurse, a part-time nurse, a health educator, and a consulting physician. The Student Health Service is on the Main Campus in Student Union I, Room 232 (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, outpatient 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 232, (703) 323-2584.

Services to Disabled Persons

Students with disabilities have access to a wide range of services and assistance. They may contact the Adviser to Students with Disabilities at (703) 323-2523 (Voice/TDD) for more information.

Housing

The University has on-campus housing for 1,750 students. Several types of housing are available including residence halls, apartments, and townhouses. Commonwealth and Dominion Halls each house 250 residents in double occupancy rooms. The student apartments complex consists of nine three-story buildings that contain 121 apartments and house 500 residents. The Patriot Village complex consists of 20 buildings that house 180 residents. University Commons is an eight-building complex accommodating 500 students. University Park Townhouses is a 36-unit complex located a quarter mile from the Main Campus.

See "Housing Costs" under the Tuition, Expenses, and Financial Aid section of the catalog. For complete information about the University's on-campus housing, write or call the Director of Housing and Residential Life, (703) 323-2354. The Housing Office will also
supply information about off-campus housing.

**Counseling Center Services**

The Counseling Center is staffed by professional counselors who help students reach their academic, social, and personal goals. Counselors guide students in making appropriate choices concerning education and work, developing effective study skills, and learning to manage personal problems that interfere with learning.

Services are available at no charge to all University students. The main office is in Room 364, Student Union I, and is open Monday through Friday from 8:30 a.m. to 5 p.m., and Tuesday and Wednesday evenings. For information about the following Counseling Center services, or for assistance, call 323-2165: mental health services; learning services; self-assessment; black peer program; re-entry program; consultation and support for others at the University who are concerned about a student; training and supervision for practicum and intern students; and referral to other sources.

The University Counseling Center is accredited by the International Association of Counseling Services. All services to students are confidential and no information is released without the student's written consent.

**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 during the fall and spring semesters. For information call 323-2476. The following major services are offered:

**Career Counseling.** In individual counseling sessions and workshops, students learn a career-planning decision-making process that can be used throughout their lives. Thorough self-assessment of personal interests, skills, values, and motivations is emphasized prior to researching appropriate majors and relevant career opportunities. Counselors are also available to assist students with various aspects of their job search.

**Career Seminars and Workshops.** These include Career Identification, Choosing/Changing Majors, Adult 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 Resource Library.** This specialized library contains information on career fields, graduate and professional schools, government employment, researching employers, and job hunting. A computerized career guidance system is available, as well as handouts on resume writing and many other relevant subjects.

**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 Resource 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 Career Resource Library and posted on a job bulletin board outside the office.

**Credential File.** Graduating students and alumni may establish credential files containing references, resumes, and course listings to support application for employment or graduate school.

**Veterans Services**

The Veterans Coordinator in the University's Office of Veterans Services 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.)

**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 the student services that are housed within their respective administrative units and assists the University by providing continuity to services for minority students. Helping students understand their academic needs and then find appropriate ways to meet them is an important function of the office. Minority Student
Services is located in Room 352 of Student Union I, (703) 323-2383.

**Campus Ministry**

The Campus Ministry is an ecumenical group available on campus to assist students, faculty, and staff. Their ministry includes religious counseling, Bible study, social-action opportunities, education programs, social activities, seminars, retreat weekends, and fellowship gatherings.

The Campus Ministry offices are in Student Union I, Rooms 207 and 229, and are open daily for discussion and assistance of any kind. For more information, call 323-2160 or contact the individual ministries:
- Assemblies of God (323-2160); Baptist (323-3848);
- Episcopal (323-4217);
- Greek Orthodox (671-1515);
- International Students (830-3483);
- Jewish (323-3848 or 301-468-3422);
- Mormon (323-2160);
- Navigators (323-2160);
- People of the World (323-2160);
- Roman Catholic (323-4218 or 425-0022);
- United College Ministries (820-2144).

**International Student Services**

International Student Services, located in the Office of International Programs and Services, is responsible for assisting international students to enter George Mason University and to resolve the problems of study and life in an American university.

Services consist of the following:

1. Evaluating overseas credentials of prospective international students and advising on admission as well as on transfer credit
2. Advising international students and scholars on immigration and visa requirements; cross-cultural understanding; and academic, housing, and personal problems
3. Organizing activities for international students and scholars to integrate them into the academic process, the campus student population, and the surrounding community
4. Conducting intercultural events on campus, such as International Week, United Nations Day, Ethnic Days, International Coffee Hour, films, and lectures
5. Representing international students at GMU before the U.S. Immigration and Naturalization Service, the State Department, government agencies in international education, and foreign embassies.
6. Establishing links between international students and the local community through program activities and holiday hosting
7. Disseminating information via newsletters and other publications of importance to international students and their American counterparts.

**Student Activities**

Student participation helps shape the character and the quality of the students and the University. Thus, George Mason encourages people to express their talents and interests through participation in student government, student publications, and through membership in academic, Greek, international, special interest, law, cultural, religious, and athletic organizations.

While involvement in such activities is a desirable adjunct to classroom learning, participation must be complemented by academic progress. For this reason, only students in good academic standing are eligible to hold or run for elective or appointive office in any organization or activity associated with the University, to participate in any athletic or other activity representing the University on either an intercollegiate or club level, or to serve as a working staff member of any student organization. It is the individual student's responsibility to notify an organization when becoming ineligible.

**Athletic Activities**

The intercollegiate athletic program of 19 men's and women's sports at George Mason University offers student athletes competition with universities in the Washington, D.C., area, the State of Virginia, and throughout the United States.

The men's and women's programs are members of the National Collegiate Athletic Association Division I and the Colonial Athletic Association. To be eligible for athletics, all student athletes must be in good academic standing and must be making satisfactory progress toward a degree at George Mason University. Satisfactory progress is defined as either earning 24 credit hours toward a particular degree from the beginning of a sport season to the beginning of the subsequent sport season, or by earning an average of 12 semester hours for each semester a student athlete is enrolled at the University.

Intercollegiate competition for men includes baseball, basketball, cross-country, golf, soccer, tennis, indoor and outdoor track and field, volleyball, and wrestling.

Intercollegiate athletic competition for women includes basketball, cross-country, indoor and outdoor track and field, tennis, soccer, volleyball, and softball.

Athletic scholarships and financial aid (based on need) are available to both male and female student athletes.

Athletic highlights include the following: GMU's first NCAA championship — women's soccer 1985; first post-season play in men's basketball — NIT 1986; Rob Muzzio — twice NCAA decathlon champion 1984-1985;
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.

Theatre events include four major productions, as well as several student-directed, one-act, and experimental plays. 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 (764-6200).

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

Forensics Team

George Mason's nationally ranked Forensics Team gives students the opportunity to develop their communication skills, ranging from persuasive and informative speaking to prose and drama interpretation. For the past 12 years, George Mason has been named the "First Place Team on the East Coast."

Academic credit is available for participation on the Forensics Team. Interested students should contact Dr. Bruce B. Manchester, Director of Forensics, in the Department of Communication.

Debate Team

George Mason's nationally prominent Debate Team competes in more than 25 intercollegiate debate tournaments each year with universities from throughout the country. The Debate Team provides George Mason students, regardless of previous experience, with the opportunity to develop speaking, analytical thinking, writing, and research skills that prepare them for a variety of professional pursuits.

Academic credit is available for participation on the Debate Team and membership is open to any full-time undergraduate student. Interested students are encouraged to contact Dr. Warren Decker, Director of Debate, Department of Communication.

Student Organizations

Approximately 130 on-campus student organizations complement the University's curricular programs and provide opportunities for students to exercise and develop their talents. The organizations span a wide range of interests, including politics, forensics, drama, music, journalism, academic, 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.

Recognized student organizations are also members of larger umbrella organizations. These clusters of organizations facilitate coordinated development of campus activities, interaction with other student organizations, and fee funding for student organizations. They also provide a University mailing address, access to file and storage space, duplicating services, and a channel of communication with the University administration regarding support services for student organizations.

George Mason now recognizes 12 fraternities and 7 sororities. 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 fraternities or sororities at George Mason, contact the Student Activities office, 305 Student Union I, (703) 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 obtained 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.

WGMU Radio is a student-run radio station, broadcasting to members of the University community. The station is committed to educational radio, and offers opportunities for all interested students, with or without experience in radio. For more information, contact Cynthia Lont, faculty adviser, (703) 323-3578, 111 B Thompson Hall, or the Station Manager, (703) 323-3592, 216 Thompson Hall.

Broadside is the University's student-run newspaper. The paper provides opportunities in news writing, sports reporting, feature writing, editing, layout, advertising, public relations, and many other areas. Contact faculty adviser Scoobie Ryan or the Broadside staff in Student Union I.
Student Alumni Association

An active Student Alumni Association assists the GMU Alumni Association and the Office of Alumni relations with activities such as homecoming, reunion, the annual phonathon, and other events. Alumni enjoy meeting students and students benefit from meeting alumni in their academic fields.

Students interested in joining the Student Alumni Association should ask an instructor or adviser to nominate them. For more information about alumni activities and the Student Alumni Association, contact the Office of Alumni Relations, 4520 Roberts Road at the Main Campus, 323-2975. The office is open Monday through Friday from 8:30 a.m. until 5:00 p.m.

Awards

George Mason University recognizes students for excellence and grants them awards that are given by various administrative offices and academic departments. The Student Activities office (323-2574) coordinates the Annual Student Awards Ceremony and maintains the most comprehensive awards listing.
Admission
Admission Policies

Admission to the University and acceptance into certain degree programs are competitive. Space available is determined largely by the availability of resources. Demand for resources is balanced to meet the University's many educational responsibilities. Therefore, students are evaluated on the basis of past performance and potential for success.

Acceptance into junior-level courses, in particular, is limited in business, communication, education, nursing, and social work (see appropriate catalog sections). Junior-level applicant selection is competitive, with priority placed on potential for success. Grades are important and necessary, but may not be the only evidence used by selection committees.

The University expects applicants for undergraduate admission to be in the upper 50 percent of their class. They must also demonstrate considerable facility in using the English language and an understanding of basic mathematical processes.

An applicant must submit a complete record from an accredited secondary or preparatory school (see outline below). Satisfactory scores are required on the Scholastic Aptitude Test given by the College Entrance Examination Board or the ACT Assessment given by the American College Testing Program.

Freshman applicants are also encouraged to submit CEEB Achievement Test scores in three subjects, such as English, science, and mathematics (Level 1 or 2), and foreign languages. Test scores in French, German, Greek, Latin, Russian, and Spanish are used for placement.

To ensure that applicants with unusual qualifications are not denied admission, the above criteria are applied flexibly. Applicants with unusual qualifications should describe them in the narrative section of the application for admission. Personal interviews and recommendations are not required unless requested.

Freshman Requirements

An applicant for admission to any undergraduate degree program must submit scores earned on the SAT or ACT and present 15 units of high school credit, usually from the disciplines listed below. In addition, an applicant for admission to the computer science, engineering, or mathematics program must submit one additional credit each in mathematics and laboratory science, and a total of 16 units.

English (4)
Mathematics (3)*
(selected from Algebra I, Algebra II, geometry, trigonometry, probability, and elementary calculus)

In addition, for admission to the computer science program, a student must present a mathematics SAT score of at least 600, combined SAT scores of 1,050, and a high school GPA of 3.0 or more. These requirements may be reduced slightly on evidence of substantial extra high school preparation such as a total of 19 or 20 academic units, with additional courses in science, mathematics, or computing.

Foreign Language (2)**
(These units should be in the same foreign language.)
Social Studies (1)
Laboratory science—biology, chemistry, earth science (ESCP), or physics (1)***
Electives (4)
Computer science, engineering, and math applicants: *must present one additional unit of mathematics from courses listed **may substitute additional mathematics or laboratory science in lieu of a foreign language ***must submit one additional unit of laboratory science (chemistry and physics are recommended).

Because certain subjects are more useful to the engineering student, their inclusion in the high school programs of applicants is strongly recommended. These subjects include additional mathematics, physics, chemistry, and mechanical or engineering drawing.

Early Decision

Freshman applicants for fall semesters who apply for admission before January 1 will be reviewed automatically for early decision. Successful candidates will be notified beginning in December and continuing until February 1. If an early decision cannot be given, the student's application will be considered at the time all other applications are reviewed and evaluated.

Early Admission

Rising high-school juniors who have either completed high-school graduation requirements or have only senior English and government to complete, may, with the recommendation of their high-school guidance counselor, principal, or headmaster, apply for admission and thereby enter the University one year early. Applicants should present above-average grades, SAT/ACT scores, and a high-school course of study demonstrating a rigorous academic preparation for university-level work. Candidates for this program must arrange an interview with the director of admissions.

http://catalog.gmu.edu
Concurrent Enrollment (Enrichment)

Advanced high-school students may apply for admission as part-time students in the concurrent enrollment program. Applicants should have at least a B grade-point average and have taken the ACT or SAT examination. Additionally, students must be recommended by their high-school guidance counselor, principal, or headmaster, and the appropriate department chair at GMU. Interested students may contact the Admissions Office for more information.

Transfer Requirements

The University accepts qualified students by transfer from other colleges. An applicant for admission who has attended a collegiate institution for any period of time should request that the registrar of each institution attended send two official transcripts of records, including a statement of academic standing, to the Office of Admissions. A complete secondary school record is ordinarily required. In certain cases, however, college transcripts showing transferable work comparable to the basic degree requirements of the intended major may be accepted in lieu of high school transcripts, SAT, or ACT scores. Students planning to transfer into computer science should consult the catalog section entitled "Admission to Computer Science," under the Computer Science listing. Students transferring from vocational programs or nonaccredited institutions are normally expected to meet the University's requirements governing admission of freshmen.

Application for admission as a transfer student is competitive. To be academically eligible for consideration, a transfer student must present a C average or better (2.0 on a 4.0 scale) on all collegiate work attempted. Students on active social or academic probation, suspension, or dismissal are not eligible for admission as a transfer.

To be considered for admission to the computer science, engineering, or mathematics programs, a transfer applicant should present a cumulative GPA of 2.5 (on a 4.0 scale) or better.

Transfer students should note the requirements shown under the heading Credits Earned at Other Colleges.

Admission of International Students

General Requirements for International Students

Application for admission to the University by international students holding or seeking F-1 or J-1 visas should be made directly to the Admissions Office before January 1 for the subsequent academic year. All educational support documents and test scores to complete the application must be received in the Admissions Office by April 1 or the application will be canceled. The deadline is enforced to ensure adequate time to process applications. Applications from international students will be considered for the fall semester only and will be reviewed and evaluated with all other applications. Students in the English Language Institute (ELI) should consult the Admissions Office for application procedures. Applicants with permanent residence in the United States and nonimmigrant visa holders (A-1, G-4, etc.) must meet freshman or transfer admission requirements.

Admission to the University is competitive; therefore, while minimum standards ensure that an application will be considered, they do not guarantee admission. The number of offers of admission that the University can make in a competitive environment is determined by the number of applicants, the qualifications of the applicant pool, and the amount of available space. In addition to overall admission requirements, some schools and colleges have individual requirements for acceptance into the major. (See school or college admission requirements.)

Freshman Requirements for International Students

1. If applicants have not completed a year of collegiate work at a college or university in the United States, they are required to submit a satisfactory score on the Scholastic Aptitude Test (SAT) or American College Test (ACT).

2. Individuals whose native language is not English are strongly urged to take the Test of English as a Foreign Language (TOEFL) in addition to the SAT or ACT exam.

3. A minimum score of 570 on the TOEFL is required for admission consideration. Official test scores must be sent directly from the Educational Testing Service. Information concerning the time and place of the TOEFL can be obtained from TOEFL, Educational Testing Service, CN 6151, Princeton, NJ 08541-6151, USA. Phone: (609) 882-6601.

In addition to the academic requirements mentioned above, international students must meet the following conditions:

1. An international student holding an F-1 or J-1 visa must comply with current United States Immigration and Naturalization Laws. Students who are out of status with the United States Department of Justice Immigration and Naturalization Service will not be considered for admission.

2. With the application for admission, a student must present certified documents on subjects studied, grades received, examinations taken, and degrees earned from all secondary schools, colleges, and universities attended. Records of state or national examinations and certificates are also required. Students must establish that they have completed at least the equivalent of a United States high school diploma. Non-English documents must be presented in original form, and with certified translations.

3. Applicants must also provide a completed and notarized GMU financial statement that includes a bank statement verifying that funds have been earmarked for school expenses. Yearly expenses are estimated to be $14,227 (subject to change). International students may be required to have their financial resources verified by an American banking institution.

4. Students enrolled at the University on F-1 or J-1 visas must maintain full-time status each semester, excluding summer session.

5. All new students at the University must submit the Admissions Medical Form signed by a health professional. The form must verify that the student is in good health.
physical and mental health and that his/ her inoculations are current.

6. Health insurance is mandatory for students on F-1 and J-1 visas. Students who do not enroll in the University's insurance program must show proof of comparable coverage.

7. Students with F-1 or J-1 visas must initially attend the educational institution that issued the Certificate of Eligibility (Form I-20 or IAP-66). Transfer from one United States educational institution to another must be authorized by the United States Immigration and Naturalization Service. Forms are available from the international student adviser.

8. The I-20 form is available to those who, after acceptance, require an F-1 student visa. Students sponsored by their government or the United States government are required to enter the United States on J-1 visas. The form IAP-66 will be provided by the University after admission, if necessary.

Transfer Requirements for International Students

A transfer student is a student who has completed a year of work at a college or university located in the United States. In addition to the above requirements, international transfer students must meet the standards listed below:

1. International students (F-1 or J-1 visa holders) transferring from American colleges or universities must complete the equivalent of a year of college-level academic work (24 semester hours or 36 quarter hours) before admission to George Mason University. The academic work must include a year of college-level English composition.

2. Transfer applicants who have not completed one year of English composition and one year of literature with grades of C or better must also submit satisfactory TOEFL, SAT, or ACT scores.

3. Transfer students from non-American colleges and universities will be required to submit satisfactory scores by the SAT examination. Transfer applicants whose native language is not English are strongly encouraged to take the Test of English as a Foreign Language (TOEFL) in addition to the SAT.

Special Types of Enrollment

Extended Studies Enrollment

The Extended Studies Enrollment procedure allows qualified persons who are not admitted students to apply to enroll in on- and off-campus courses.

Approved Extended Studies enrollees register on a space-available basis according to an assigned priority date and time as determined at the time of counseling and course approval in the Division of Continuing Education. See the section entitled Division of Continuing Education for more information on Extended Studies Enrollment.

Guest Matriculant Enrollment

Persons enrolled in undergraduate degree programs at other accredited institutions who wish to take under-

graduate courses at the University for transfer to their home institution enroll through the Division of Continuing Education. Such students should submit evidence of permission to enroll from the appropriate dean or registrar of their home institution to a counselor in the Division.

Guest matriculants who are enrolled in graduate programs at other accredited institutions may contact the Graduate School to make arrangements for taking courses.

Senior Citizens Enrollment

Under terms of the Senior Citizens Higher Education Act of 1974, as amended and as applicable to the University, eligible Virginia residents over 60 years of age with taxable income less than $7,500 are entitled to enroll, on a space-available basis without payment of tuition and fees, in courses for academic credit. There is no income condition on audit or other noncredit enrollments under this act. Tuition and fees, however, are charged for noncredit courses designed exclusively for senior citizens groups. Interested persons should contact the Division of Continuing Education.

Graduate Course Enrollment by Undergraduates

Undergraduates may enroll in graduate courses only if they have exhausted all upper-level undergraduate courses relevant to their educational objective and can demonstrate a level of maturity required for graduate-level courses. Undergraduates must have completed all requirements for the graduate course in which they wish to enroll. Undergraduates in these circumstances may, with the written permission of the course instructor and the chair of the department offering the course, register for some graduate courses (those numbered 500-599) and apply the credit earned toward an undergraduate degree.

Students may seek to take graduate courses for reserve graduate credit, earned credit held in reserve to apply later toward a graduate degree. Approval to register is normally given only to George Mason seniors who are within 15 hours of completion of undergraduate study. 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. (See the Graduate School catalog for details.)

Summer Session Enrollment

Enrollment in the summer session does not constitute undergraduate admission to a regular (fall or spring) semester.

Summer EXCEL Program

EXCEL (Experience Collegiate Education and Living) is a month-long summer residential program designed to give academically advanced, college-bound students an opportunity to sample college life and learning. The program provides a first-hand experience in preparing for the academic and social challenges of college. EXCEL students are totally immersed in the University's learning community by taking one or two freshman-level summer courses and by participating in organized social, recreational, and learning activities.
Admission Procedures

Applying for Admission

Application for undergraduate admission should be made to the Office of Admissions on forms provided upon request. A nonrefundable and nontransferable fee of $15 must be attached when the forms are submitted.

Application Deadlines

Undergraduate applications for fall admission should be submitted no later than February 1 for freshman applicants and March 15 for transfers. Admission decisions are usually made after the first-semester grades of the senior year and all appropriate test results have been received by the Office of Admissions. Admission is contingent upon satisfactory completion of requirements and graduation from high school.

Test Requirements

Freshman candidates for admission are required to take the SAT or the ACT. Official test scores should be sent directly from the appropriate testing service.

Transfer candidates for admission are required to submit the score earned on the Test of Standard Written English (TSWE). The TSWE has been part of the SAT since 1976. A personal copy of the SAT score report, including the TSWE, may be submitted.

Applicants who have not taken the TSWE should arrange to take the free, 30-minute exam on the GMU campus as early as possible. Additional information is available through the GMU testing service, (703) 323-2525.

Notice of Acceptance

The University complies with the College Board candidate reply date of May 1, but encourages students to confirm their intention to enroll by returning the confirmation card before that date. Prompt confirmation of the offer of admission qualifies students for early advising and course selection, registration, housing, and other services. The order in which confirmation cards are received in the office determines priority for advising and course selection. Candidates approved for admission must confirm their intention to enroll. Failure to comply adversely affects reserved space.

Right to Withdraw Offer of Admission

The University reserves the right to withdraw offers of admission if applicants fail to satisfy all requirements prior to the closing of spring or fall registration.

Admissions Committee

An Admissions Committee reviews undergraduate admission decisions and appeals.

Other Stipulations

The Office of Admissions or the Admissions Committee may make other stipulations or recommendations regarding the admission of an individual.

Academic Testing

Testing Center

As a means of assessing the academic preparation of its students, the University regularly requires the submission of certain test information.

Students may make arrangements with Academic Testing for taking College Level Examination Program (CLEP) tests and the Test of Standard Written English (TSWE) and may obtain applications for the Test of English as a Foreign Language (TOEFL), the Graduate Record Examination (GRE), Law School Admission Test (LSAT), Graduate Management Admission Test (GMAT), Medical College Admission Test (MCAT), Dental Admission Test (DAT), Veterinary Aptitude Test (VAT), and the Miller Analogies Test (MAT).

Test of Standard Written English (TSWE)

Scores from the TSWE (a part of the SAT) are normally submitted as part of each student's admission application, to indicate probable success in writing at the university level. However, in some cases students may have taken a form of the SAT that omitted the TSWE. In those cases, students are required to submit scores from the TSWE as soon as possible after admission to the University and prior to registration (this requirement does not affect extended studies enrollees unless they seek admission to the University or enrollment in ENGL 101). Transfer students who have studied English composition or literature at their previous college are not required to take the TSWE. Students may take the TSWE through the Office of Academic Testing.

Advanced Placement Program with Credit

First-semester freshmen who have completed advanced-level courses in secondary schools and have passed College Board Placement Examinations with scores of 5 or 4 may be granted a maximum of 30 semester hours credit (without grades) upon recommendation of the department concerned and with the approval of the appropriate dean. Credit for a score of 3 is at the discretion of the department. Advanced credit earned in this manner by entering freshmen will be counted toward or will fulfill any pertinent University or departmental graduation requirements.

Proficiency, Advanced Placement Examinations, and Credit by Examination

Proficiency examinations are offered in a number of courses normally taken during the first two years. Each January and August, the Department of Biology administers an examination in BIOL 124,125, Human
Anatomy and Physiology, to candidates presenting some evidence of similar training. Application and authorization forms must be obtained from the School of Nursing. A copy of a transcript indicating past course work equivalent to BIOL 124,125 must accompany the form requesting credit by examination. This form should be submitted to the Department of Biology at least one week before the announced examination date. Four credits are awarded for a grade of C or above. Examinations may not be repeated.

Examinations in English, government, geography, mathematics, and music are usually announced by the appropriate departments. A satisfactory score on an examination affords a student credit for the course in question.

On the basis of examinations presenting evidence of qualification, regularly enrolled students may be granted up to 30 semester hours of undergraduate credit for courses in the University curriculum. The only exceptions to this regulation are registered nurses enrolled in the nursing B.S.N. program (see School of Nursing for details). Credit is recorded for grades of C or above, but does not affect the student's grade point average computation.

Students may not earn credit by examination in courses in which they are enrolled beyond the time allotted for adding courses in that semester or in courses already audited or failed at the University. Transfer students may not earn by examination part of the 30 hours that must be completed at George Mason University to earn a degree.

These examinations conform to University policies, evaluate the competence of students, and afford a reliable basis for assigning students to more advanced courses. Credit by Examination forms are available in the offices of the academic deans.

**Foreign Language Placement, Testing, and Credit by Examination**

The CEEB Achievement Test in a foreign language (normally given to high school students) is used for placement in French, German, classical Greek, Latin, Russian, and Spanish. This placement test is mandatory for all students who have studied one of these languages in high school and wish to continue study of the same language at the University.

Students who have taken the CEEB Achievement Test in a foreign language before admission may have their score used for placement. Students must either provide official test scores or take the test at George Mason. The testing dates are listed in the Academic Calendar. It is the student's responsibility to apply for and take the test before initial enrollment. Interested students should contact the Department of Foreign Languages and Literatures.

Students may not enroll for credit in a course at a level lower than the one in which they are placed. The foreign language requirement for the B.A. degree may be waived for international students who present satisfactory evidence of having studied for four or more years in an educational institution in which the primary language of instruction was other than English. No credit through the intermediate level is awarded when the foreign language requirement is waived. College Board Advanced Placement Test scores may be used for advanced placement and credit, provided the test was taken during the three years prior to the student's registration at GMU.

On the basis of examinations administered by the department, students may be granted credit for undergraduate courses above the intermediate level in foreign languages offered at the University. Credit by examination will not be awarded in conversation and/or composition courses.

Transfer students receiving credit for college-level foreign language study completed at other colleges must consult the department to determine their correct placement. If through transfer credit, a placement test score, or GMU course work, a student meets the prerequisite for a lower-division foreign language course which is not offered during a particular semester, the dean will normally grant permission to continue the foreign language sequence by taking courses at another college or university.

All students are urged to start or to continue foreign language study in their first year. Elementary and intermediate courses should be completed in immediate succession, preferably by the end of the sophomore year.

Effective September 1, 1987, credit by examination was no longer awarded in elementary and intermediate foreign language courses.

**College Level Examination Program (CLEP)**

The University currently does not recognize credits earned by CLEP General Examinations. As part of the Credit by Examination process, certain departments may use CLEP Subject Examination scores for total or partial credit in certain courses. Consult the individual department. The Testing Service is a certified CLEP Administration Center. Interested students should consult the Testing Service for further details.

**National Teacher Examinations**

Persons seeking initial certification as teachers in Virginia are required to submit scores of the National Teacher Examination. Academic Testing can provide information and applications for taking this examination.

**Transfer Credit**

A student transferring into the University may not assume that credit will be given for work at other institutions until an officially signed statement has been received from the college in which the student intends to major. It is the responsibility of the student to see that the Office of Admissions receives official transcripts of all work taken elsewhere.

In general, credits are accepted from institutions accredited by the appropriate regional association provided that the credits carry a grade of C or better and are of the quality of courses offered at George Mason University. Generally, no more than half of the total required semester hours in a baccalaureate program may be transferred from junior or community colleges. A University transfer manual and a VCCS/GMU transfer guide facilitate the orderly transfer of
credits for students enrolled in a unit of the Virginia Community College System (VCCS) and, more particularly, at Northern Virginia Community College. A maximum of six semester hours may be transferred from correspondence courses sponsored by regionally accredited institutions. The VCCS/GMU transfer guide is available from the VCCS Counseling Offices or the GMU Office of Admissions.

Credit Earned at Nonaccredited Colleges

Transfer credits from nonaccredited colleges are tentatively evaluated upon admission. Transcript information is used for purposes of advanced placement, and transfer credit is recommended after the performance of the student at George Mason has been established. Transfer credit is not granted for study in noncollegiate institutions, except in the Bachelor of Individualized Study (B.I.S.) Degree Program.

Credit to be Earned at Other Institutions

A student who applies for admission to the University to profit from its educational programs would not normally be expected to seek simultaneous credit enrollment at another collegiate institution. In those unique situations when a student seeks to enroll in credit courses at another collegiate institution concurrently, the student must obtain advance written approval from the appropriate George Mason dean in order to take a course elsewhere (including the Consortium for Continuing Higher Education in Northern Virginia) for credit toward a degree at George Mason. This process permits a student to enroll elsewhere in a suitable course unavailable at George Mason. Catalog numbers and descriptions of courses to be taken elsewhere must be submitted with the request for approval.

Study Abroad

The University recognizes the educational value of travel and study abroad and allows students to broaden and enrich their education through approved overseas programs. Through the Office of International Programs and Services, the University assists students who wish to participate in overseas study programs administered in cooperation with academic departments.

Students interested in studying abroad should contact the Office of International Programs and Services (OIPS), where a library on opportunities for study abroad is housed. Before departing, students must have programs approved by OIPS, by the department chair supervising the major field, and by the appropriate dean. They must also attend an orientation program organized by OIPS.
Tuition, Expenses, and Financial Aid
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 fees. Registration is not allowed if a student has outstanding financial obligations.

The in-state tuition rate applies only to students formally classified by the University as Virginia residents. 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.

Payments for tuition, room, meal plans, and other applicable fees are due at the Cashier’s Office on or before August 4, 1988, for the fall semester and December 19, 1988, for the spring semester (regardless of postmark).

An early registered student who cannot attend classes during the semester for which registered should cancel registration by written notice to the Office of the Registrar as outlined under Registration.

With a late fee of $25, payment of tuition will be accepted until August 11, 1988, for the fall semester and until January 5, 1989, for the spring semester. If payment has not been received by these dates, registration will be canceled for the applicable semester. Students whose classes are canceled because payment has not been received by August 11 for the fall semester or by January 5 for the spring semester must reregister or incur a $20 administrative fee. Affected students may attempt to build a new schedule on a space-available basis. Tuition and fees for courses added after the cancellation date must be paid on the same day courses are added or the registration will be canceled. Students who register and then withdraw from the University before classes begin or during the first week of classes, or who have courses canceled for nonpayment, are charged a $20 administrative fee.

Methods of Payment

By act of registration, students accept the responsibility for the charges of the entire semester, regardless of method of payment. Payment in full must be received at the Cashier’s Office on or before the due date, unless arrangements for an alternative method of payment have been made.

Credit Cards. Payment may be made by VISA or MASTERCARD. These payments may be made in person by presenting the card at the Cashier’s Office or by returning a copy of the bill with the appropriate information filled in. In either case, the Cashier’s Office will request a daytime telephone number in case of processing difficulties.

Installment Payment Plan. A monthly installment payment plan is offered through Academic Management Services (AMS) of Pawtucket, Rhode Island, for the 1988-89 academic year.

This plan allows a student to pay all or part of the annual tuition in 10 equal monthly installments without interest charges. Participation is renewable each year at an annual cost of $45. The enrollment fee also covers the cost of a Life Benefit Insurance plan, which guarantees payment of the balance of the budgeted amount in the event of the death of the parent who is contractually responsible for the payments.

Students should contact AMS at the toll-free number (800) 556-6684 for further information.

Deferred Payment Plan. A deferred payment plan is available for students whose tuition and fees for the semester exceed $510. Students using a deferred payment plan must return a signed copy of the deferred payment promissory note to the Student Accounts Office by no later than August 4, 1988, for the fall semester and December 19, 1988, for the spring semester. A $25 administrative fee is charged for this service. Students must pay at least one-half of the total fees as the initial payment, with the remaining tuition and fees payable in two equal installments.

Students are responsible for ensuring payment of installments on or before the due dates.

Due Dates for Deferred Payments. Fall semester: second and third payments due September 7 and October 5, 1988.

Spring semester: second and third payments due February 15 and March 15, 1989. Payments must be received in the Cashier’s Office on or before the due date.

In-State Out-of-State

<table>
<thead>
<tr>
<th>Students</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Fee</td>
<td>$20.00</td>
</tr>
<tr>
<td>Tuition and Fees, full-time (12 through 17 semester hours), per semester</td>
<td>1,020.00</td>
</tr>
<tr>
<td>Tuition and fees, per hour (less than 12 or more than 17 hours), per semester</td>
<td>85.00</td>
</tr>
<tr>
<td>Graduation Fee</td>
<td>15.00</td>
</tr>
</tbody>
</table>

Subject to approval by the Board of Visitors.
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 $15 penalty fee for the payer. Further, students who fail to make good such checks within five calendar days following notification by the Cashier’s Office are placed on financial suspension without further notice.

Financial Suspension

All academic credit is withheld for students who are not in good financial standing with the University. 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, have been paid in full. In instances where the outstanding financial obligation that caused the financial suspension is more than $50, a reinstatement fee of $25 is imposed.

Failure to Meet Financial Obligations

Late Fee. Failure to make any payment on or before the due date results in a late charge of $25.

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 additional costs incurred in the collection of delinquent accounts. Fines owed libraries of institutions and participating public libraries of the Consortium for 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 may not return to good financial standing with the University until all outstanding obligations — including late charges plus a $25 reinstatement fee — have been paid.

Refunds

If students withdraw from the University before the beginning of the semester or 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 as certified by the registrar. Hours dropped after the third week of classes must be paid in full. The refund scale is shown below and is posted in the display case on the first floor of Krug Hall. It is the student’s responsibility to be familiar with the refund scale. The refund process is initiated by the student, who submits a request to the Office of Student Accounts.

Refund scale per tuition hour

<table>
<thead>
<tr>
<th>Week</th>
<th>In-State</th>
<th>Out-of-State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (100%)</td>
<td>$85.00</td>
<td>$176.50</td>
</tr>
<tr>
<td>2 (66.67%)</td>
<td>56.70</td>
<td>117.70</td>
</tr>
<tr>
<td>3 (33.33%)</td>
<td>28.40</td>
<td>58.90</td>
</tr>
</tbody>
</table>

Refund scale for rooms and meal plans

<table>
<thead>
<tr>
<th>Week</th>
<th>Room</th>
<th>Meal Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total less $100</td>
<td>Total less $50</td>
</tr>
<tr>
<td>2</td>
<td>66.7% of total</td>
<td>66.7% of total</td>
</tr>
<tr>
<td>3</td>
<td>33.3% of total</td>
<td>33.3% of total</td>
</tr>
</tbody>
</table>

Off-Campus Courses

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

Credits Earned Elsewhere

A few George Mason University degree programs include academic credits which students must earn at other institutions. Students enrolling for academic credits at other institutions assume all financial responsibility for these arrangements.

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.

See the Admissions Office for a copy of the complete domicile legislation.

Change of Domicile Classification

Students requesting a change of classification from out-of-state to in-state must file the required form before the first day of the semester for which in-state status is sought. Forms are available in the Admissions Office, Room 117 Finley.

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 and fees that would normally have been charged and shall be subject to appropriate disciplinary action.

Other Expenses

Deposits. By the end of the second week of classes, students enrolled in a chemistry laboratory course must purchase from a cashier one laboratory card priced at $5, which covers breakage or loss of equipment. As such loss occurs, the card is punched for the
cost of the item in question. Unused portions of the

**Transcript fee.** A fee of $2 is charged for the first copy

Unused portions of the card which have been validated by the Chemistry Department are redeemed upon presentation to the cashier no later than May 31, 1989.

**Graduation fee.** The University requires a $15 graduation fee. See “Application for Degree” for more information.

**Motor Vehicle Registration Fees.** Students who park their vehicles on University property must register them with the University Campus Police Department and pay a fee for a parking decal, based on the following scale:

- $55 full academic year, September 1 through August 31 ($20 for a second vehicle).
- $35 semester, fall or spring ($20 for a second vehicle)
- $20 summer session ($20 for a second vehicle)
- $15 motorbikes

The Traffic and Parking Office is at the rear of the West Building in T-102, and in SUB I, second floor, old Patriots Locker. (See Motor Vehicles Policy for more information.)

**On-Campus Housing Costs (per year, 1988-89)**

<table>
<thead>
<tr>
<th>Student Apartments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bedroom</td>
</tr>
<tr>
<td>2 Bedrooms</td>
</tr>
<tr>
<td>3 Bedrooms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residence Halls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Double</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Townhouses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

| Meals (10-19 meals per week) | $1,264 - 1,616 |

For more information, write or call the Director of Housing and Residential Life, George Mason University, Fairfax, VA 22030-4444; (703) 323-2354.

**Financial Aid**

**Office of Financial Planning and Resources**

The Office of Financial Planning and Resources 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 Building I, Room 354, the office is open Monday through Friday from 9 a.m. until 4:30 p.m., and Tuesday until 7 p.m.

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 Planning and Resources 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:

1989-90 Academic Year

- Freshmen: March 1, 1989
- Returning Students: May 1, 1989
- Summer 1989: April 1, 1989
- Transfer Students: March 1, 1989

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 to qualify. Half-time is defined as six credit hours for both undergraduate and graduate students.

**Supplemental Educational Opportunity Grant.** A limited number of direct grants are available to undergraduate students who are enrolled at least half-time, who show financial need, and who require such assistance to attend college.
Emergency Loan Program

Mary E. Ferguson Emergency Loan Program. Currently enrolled students may borrow funds for legitimate emergenciesexcluding tuition, fees, books, and supplies. Emergency loans must be repaid within 15 days; overdue payment results in a late charge of $5 for each 15 days past due. Failure to repay the loan within 15 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.

Reserve Officers Training Corps (ROTC)

Army ROTC

The U.S. Army Reserve Officers Training Corps (ROTC) provides college-trained officers for the Active Army, the Army National Guard, and the U.S. Army Reserve. The ROTC program is designed to develop managerial ability, leadership skills, and self-confidence. Students receive commissions as second lieutenants after their completion of ROTC and the normal college requirements.

The ROTC program consists of two components: a core curriculum and professional military education. The core curriculum involves classroom instruction and practical exercises in leadership and general military subjects and skills. Professional military education is provided by any curriculum leading to a baccalaureate degree that includes academic courses in human behavior, written communication skills, military history, national security policy, and management.

George Mason University students may participate in the Army ROTC program offered on campus by enrolling in Military Science (MLSC) courses. Scholarships available through the Department of the Army cover tuition, fees, textbooks, and travel pay. Advanced Phase cadets and all scholarship cadets receive a nontaxable subsistence allowance of $100 per month for up to 10 months of each school year. Uniforms, textbooks, and all required equipment for the MLSC courses are provided by the U.S. Army.

For more information, contact the Army ROTC instructor at George Mason University in Rooms 107 and 107A of the Field House Module, or call (703) 625-4087.

Air Force ROTC

Air Force ROTC (AFROTC) is available to George Mason students through an agreement with the University of Maryland at College Park. AFROTC courses are scheduled so that students from the University may complete all AFROTC requirements during one morning per week at the College Park campus. In addition, students are eligible to compete for all AFROTC scholarships and for pilot and navigator training programs. The seven-, six-, five-, and four-semester scholarships pay for tuition at the University of Maryland and George Mason University, the cost of required books, and a $100 per month subsidy.

Virginia Programs for State Residents

Virginia Loans. The state provides funds to be used for long-term, low-interest loans for eligible full-time Virginia residents.

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.

The Virginia College Scholarship Assistance Program (CSAP). This program offers both federal and state funds to provide aid to needy students who are full-time undergraduate students and legal residents of Virginia.

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 Student Financial Planning and Resources Offices.
After graduation from the University and completion of the AFROTC curriculum at the University of Maryland, students are commissioned second lieutenants in the Air Force. Students interested in AFROTC may contact AFROTC, Cole Field House, Second Floor, University of Maryland, College Park, MD 20742, (301) 454-3242.

ROTC Courses

Although ROTC courses are offered at the University, military science credit is not transferable to the University.

Veterans Services

Veterans Educational Benefits

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

1. Veterans, active duty, and reserve personnel who have never received benefits must apply on Form 22-1990. The application should be turned in to the Veterans Services office on campus with a certified copy of the student's DD-214 (where applicable).

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 be certified for no more than two semesters while the GMU application is pending.

4. Students are responsible for notifying the Veterans Services 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 dependent
   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 Services in Room 355 of Student Union I.

5. VA benefits are paid on the following basis:

   Undergraduate | Graduate
   ------------- | ----------
   Full time 12 hours | 9 or more hours
   3/4 time 9-11 hours | 6, 7, 8 hours
   1/2 time 6-8 hours | 4, 5 hours
   less than 1/2 time 4-5 hours | 3 hours
   more than 1/4 time less than 4 hours | less than 3 hours
   less than 1/4 time | hours

Students who are on active duty and those taking fewer than six undergraduate hours are paid either tuition and fees or the rate set for the training time, whichever is less. Books and supplies are not included. Benefits are not payable for ENGL 101 or 102 when a no-credit grade is received. The Veterans Administration will not pay for an audit course.

Public Law 98-525 established a new GI Bill (Chapter 30) and also a new educational assistance program for members of the Selected Reserve (Chapter 106). Details may be obtained from the Veterans Services Office on campus.

Tutorial Service for Veterans. The VA will pay $84 per month, not to exceed $1,008 per year, for needed tutorial services. For further information, see the Veterans Office on campus.

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 a time of armed conflict; or (b) have died as a result of injury or disease incurred in a time of armed conflict; or (c) be 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 Services.

Departmental Scholarships

Applied Music Scholarships. A limited number of applied music scholarships are available to incoming freshmen and transfer students at George Mason University. Application should be made to the Department of Performing Arts.

Student Education Association Endowment Scholarships Fund. This fund provides grants to a limited number of eligible George Mason University students of demonstrated scholastic achievement, during their student teaching semester.
Registration

Registration Procedure

The Schedule of Classes, distributed by the Registrar's Office before early registration each semester, contains written instructions for registration. The number and variety of courses are increased as needed. Courses listed in the Schedule of Classes will be withdrawn if enrollment is insufficient. The University reserves the right to change the class schedule and adjust the individual section enrollment as necessary.

Students are responsible for registering properly. They should confirm the correctness of their enrollments and report any apparent error immediately to the Office of the Registrar. Students must be present at the first meeting of every laboratory course (lecture and laboratory) to claim their registration. If students cannot attend the first meeting, they must notify the department beforehand if they intend to continue in that section. Otherwise, their names will be stricken from that class roll.

Students' registration will not be canceled for failure to attend lecture courses. They will be responsible for full tuition payment and grades received for all courses in which they are registered unless (1) they are canceled for nonpayment for courses in which they registered early; (2) they are canceled administratively by the University staff due to suspension or dismissal; (3) the section in which they are registered is canceled; (4) they do not attend the first meeting (lecture or lab) of a laboratory course.

Academic Load

Although many students must work to meet living expenses, employment must not take priority over academic responsibilities. Students employed more than 20 hours a week are strongly urged not to attempt a full-time academic load. Students employed more than 40 hours a week should attempt no more than six credit hours per semester. Students failing to observe these guidelines may expect no special consideration for academic problems arising from the pressures of employment. Although 12 semester hours per semester represents a minimum full-time load, students wishing to graduate in four years will need to carry an average of at least 15 semester hours per semester. A load in excess of 17 hours must be approved by the student's academic dean.

For planning purposes, applicants for admission are asked to indicate their preference for full- or part-time status and for day or evening classes; but they may freely choose between evening and day sections of courses, and change their full- or part-time status.

Adviser's Permission to Register

Freshmen, entering transfer students, students on academic probation, and students returning from academic suspension are required to obtain an adviser's signature for registration. Students in the School of Nursing and in the departments of Biology, Chemistry, Electrical and Computer Engineering, Foreign Languages and Literatures, Health and Physical Education, Performing Arts, Physics and Social Work must obtain an adviser's signature before every registration. A Course Request Form, included in the Schedule of Classes for each registration period, is used for this purpose. All students are encouraged to consult with their advisers concerning course registration.

Students who accumulate 24 unsatisfactory semester hours will be required to have a major advising session. That session should attempt to identify the source of the student's difficulties and to plan a realistic program of study. Such students will not be allowed to continue with registration until the requirement is fulfilled.

In addition to the above, all students must meet with an adviser for a program-planning session after completing 60 credit hours and before reaching 83 hours. Students who complete this session will be granted registration priority. Those who reach 83 credit hours without completing the session will not be allowed to register. See "Advising Upon Entrance into the Upper Division" in the Academic Policies section that follows for more details.

Early Registration

Early registration for the next semester begins about midsemester by priority groups. Registration for the summer session begins during the spring break and is conducted on a first-come, first-served basis.

Student Information

Before or during each registration period, students are asked to provide directory and other types of information used in preparing a student 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 be released only 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 the student's date 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; other similar information.

A student who wishes to withhold directory information from the public should request such withholding in writing to the Registrar at the time of registration for a semester. 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, the student who is considering such a request should consult the Registrar. Withholding directory information will also prevent the posting of confirmation of registration in student locators.

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.

Student Identity Card

ID cards for fall and spring semesters are mailed to the student after the second week of classes. Summer ID cards are distributed in SUB II (bookstore lobby) the first two days of each session. Cards must be presented to obtain a library card for borrowing library materials, and may be required for admission to University events or for using University facilities after normal operating hours. Cards are not transferable and expire at the end of the semester or summer for which they are issued.

Change of Status and Address

Each student is required to notify the Office of the Registrar of any change of local home address and telephone number, change of permanent address, or change of legal name. When a student's legal name is changed, the Office of the Registrar reserves the right to require a certified copy of documents authorizing the change. Such documents are kept in the student's permanent file.

Canceling Registration/Withdrawal

Students who cannot attend classes during the semester for which they have early registered should cancel registration by written notice to the Office of the Registrar prior to the early registration deadline for payment. Students who register and then cancel/withdraw after the deadline, but prior to the beginning of classes or during the first week of classes, are charged a $20 administrative fee. Students who withdraw on or after the first day of class must complete a withdrawal form at the Office of the Registrar. Refunds of tuition on and after the first day of classes are made according to a schedule posted at the Cashier's office and published in this catalog. Withdrawal after the last day for dropping a course shown in the Academic Calendar requires approval by the student's academic dean and is permitted only for nonacademic reasons that prevent course completion.

Continuous Registration

Undergraduate students who fail to attend two consecutive semesters must reapply to the Office of Admissions. Summer session does not count as a semester.

Changing Registration (Schedule Adjustment)

Once registered, students may change their registration only by using a Schedule Change Request Form, available in departmental offices and at the registration site. Registration changes should be completed within the schedule adjustment period defined below and shown in the Academic Calendar. Permission to enter a closed section must be obtained in writing from the academic department offering the course on a Permission to Enter a Closed Section form and submitted with the Schedule Change Request form.

When completed, the Schedule Change Request Form must be delivered in person to the registration site. Schedule changes are made only on the Schedule Adjustment Days shown in the Schedule of Classes or after classes begin.

The last day for adding or dropping a 14-week course is two calendar weeks after and including the first day of classes.

After the date listed in the Academic Calendar for the end of the schedule adjustment period, add actions require approval by the chair of the academic department offering the course. Late drop approval is granted only for nonacademic reasons by the student's academic dean. Dropping all courses constitutes withdrawal from a semester (see procedure below).

Withdrawal from a Semester

Upon approval by the student's academic dean, a student may withdraw from a semester after the end of the schedule adjustment period without academic penalty, but only for nonacademic reasons preventing completion of the courses. A student who withdraws from a semester after the schedule adjustment period without the dean's approval receives F's in all courses. Withdrawal forms are available at the Office of the Registrar.

Upon withdrawal after the end of the schedule adjustment period the following notation is made on the student's permanent record: "Withdrawn voluntarily for nonacademic reasons on (date) in the (number) week of a (number)-week semester." A list of the student's courses follows, together with W grades.
Auditing a Course

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

Repeating a Course

Courses passed with a grade of C or better by undergraduates may not be repeated (except for audit). When a course is repeated, the following conditions apply: (1) all hours attempted count toward probation, suspension, or dismissal; (2) the transcript shows both the original and repeat grades; (3) only one grade per course may be presented on the degree application.

Catalogs of Other Institutions

The Office of the Registrar maintains a reference collection of undergraduate catalogs of other institutions; the Office of Career Services makes accessible a similar collection of graduate and professional school catalogs.

Degree Requirements

See Baccalaureate Degree Requirements under Academic Policies following this section for guidance in choosing courses.
Academic Policies
Academic Policies

Academic Advising Policies

Each undergraduate student is encouraged to meet with an academic adviser periodically to discuss academic programs, educational goals, and career plans. With the adviser's help, each degree student should plan an academic program to meet the general degree requirements and the specific requirements within the student's major field. During their freshman and sophomore years, students in the Plan for Alternative General Education (PAGE) should plan their schedules through PAGE advisers. Every department coordinates advising of its PAGE students through this office (222 Thompson Hall). Responsibility for reading the catalog and knowing and fulfilling the requirements of a specific baccalaureate degree rests with the student.

Since individual departments establish their own advising processes, students should check with their departments for the appropriate procedures. Students who have not yet decided on a major or who are considering a change of major are advised in the Academic Advising Center.

See "Adviser's Permission to Register" in the Registration section for categories of students who may not register without an adviser's signature.

Advising Upon Entrance into the Upper Division

Effective with the 1988-89 academic year, every student must meet with an adviser upon entrance into the upper division to adopt a program of study. Among the things that are expected to happen at this session are (1) a review of the requirements for a particular degree and the major in which a student has enrolled; (2) a review of the student's record including any deficiencies which must be made up; (3) a discussion of the career and/or graduate study options open to the student; (4) an opportunity for departmental faculty to evaluate the student's suitability to major in the chosen discipline. Both lower- and upper-division students will continue to be advised in the academic departments. Students become eligible to fulfill the requirement during any semester at the end of which they will have completed 60 or more acceptable hours.

As inducement for students to complete this requirement promptly, those who do will enjoy a higher registration priority than students with the same number of hours who have not done so. To ensure that a student does not unduly delay fulfillment of this requirement, no student who has failed to complete the program-planning advising session will be permitted to register beyond 83 hours. Once the adviser and student have worked out a program of studies, which has been approved as evidenced by the copy of the program of study signed both by the adviser and the student and placed in the student's file, the student is no longer required to seek the advice of an adviser. Each department should specifically assign each student a full-time faculty member as an adviser.

The procedures described above will also be used for change of major by upper-division students to ensure better advice for those students. Students who are in a lower-division status may change majors as in the current system. However, once a student has completed 60 hours, a change of major will require an extended session with an adviser in the new major before the change is complete. The above are minimal advising procedures, which would appropriately be followed by all undergraduate segments of the University. They are not intended, however, to prevent any department from requiring more and more regular advising sessions than those proposed above.

Academic Advising Center

Students who have not yet decided on a major or who are considering a change of major are advised in the Academic Advising Center, located in Room 348 of Student Union 1. For freshmen who have not declared a major (undecided), advising is required for the first two semesters of enrollment. Staff members in the center are usually available for individual advising Monday through Friday, 8:30 a.m. until 5 p.m., and some evenings.

Students are encouraged to walk in or call the center for information about general education requirements, programs, policies, and procedures. They may request help in the selection of a major or the best use of electives. The center also provides information for students who are interested in law, medical, dental, veterinary, and divinity schools.

Medical Sciences Advisory Committee

Students interested in medicine, dentistry, veterinary medicine, or a related medical field may receive guidance from a special advisory committee. The Medical Sciences Advisory Committee consists of faculty members from appropriate departments within the University who know the admissions requirements and standards of the professional medical science programs, and who will help students apply to professional schools. Students seeking guidance in gaining admission to a professional medical program may write to the Chair, Medical Sciences Advisory Committee, c/o Dr. James Fletcher, Assistant Vice President for Academic Affairs, Finley Building, Room 202, George Mason University, Fairfax, Virginia 22030.
**Attendance Policies**

Students are expected to attend the class periods of the courses for which they register. Although absence alone is not reason for lowering a grade, students are not relieved of the obligation to fulfill course assignments, including those that can only be fulfilled in class. In particular, a student who misses an exam without an excuse may have the course grade lowered. Students who fail to participate (by virtue of extensive absences) in a course in which participation is a factor in evaluation may have the grade lowered.

**Final Examinations Policies**

Final examinations are normally given at the end of all undergraduate courses. In predominantly laboratory courses, examinations may be given in the last regularly scheduled laboratory period. Scheduled final examinations should not exceed two hours and 45 minutes. Except for take-home examinations, changes in location or time of in-class final examinations must be approved by the appropriate department chair and appropriate dean. A professor who is considering the assignment of a take-home examination should inform the students at the beginning of the semester. Such examinations should be distributed by the beginning of the last week of classes so that students can coordinate them with preparation for other examinations. Students should not be required to submit examinations prior to the date of the regularly scheduled examination for a class. Final reexaminations are not permitted.

**Absence from Final Examinations and Special Examinations**

Absence from final examinations will not be excused except for sickness on the day of the examination or for other cause approved by the student's academic dean. If such absence is unexcused or the examination (with dean's approval) is not taken within 10 days, the course grade is 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.

**Grading Policies**

University course work is measured in terms of quantity and quality. A semester hour normally represents one hour per week of lecture recitation or not less than two hours per week of laboratory work throughout a semester. Using the semester hour as the unit of credit, the number of semester hours is a measure of quantity. The grade is a measure of quality.

**A-B-C-D-F.** The normal grading system for undergraduate credit is A, B, C (satisfactory), D (unsatisfactory, passing), and F (unsatisfactory, failing).

**A-B-C-No Credit.** A student successfully completing English Composition and Introduction to Literature (ENGL 101, 102) or Composition for Foreign Students (ENGL 100) is graded either A, B, or C; a student not attaining a level of at least C in these courses receives no credit (NC). Until a minimum grade of C is attained, these courses are not entered on a student's permanent record, nor do they fulfill degree requirements.

**S-NC.** Undergraduates may take up to six credit hours to be graded S, NC. This option applies only to electives outside the major field. Students must obtain the instructor's permission on a Credit Without Grade Form for this provision, and submit the form to the registrar by the end of the add period. An S grade reflects satisfactory (C or better) work. The S grade, but not the NC grade, appears on the transcript.

**IN (Incomplete).** A student who is passing a course may be unable to complete scheduled course work for a cause beyond reasonable control. In such a case, the instructor assigns a temporary grade of Incomplete (IN). If a 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 (spring incompletes must be changed by the last day of the fall semester), the mark of IN is changed by the registrar to F. It is the student's responsibility to submit work to the instructor with sufficient time for evaluation.

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

**IP (in Progress).** When the work of BIS 490 or of a course which is graded A-B-C-NC or S-NC is not completed within one semester, a mark of In Progress (IP) is entered on the record. IP is not treated as an unsatisfactory grade. Except for BIS 490, if IP is not changed to a satisfactory grade by the last day of classes of the next semester, the course marked IP is deleted from the record. An IP in BIS 490 not changed to a permanent grade within the same time limit is changed by the Registrar to F.

**AB and SP.** A student who has received an excuse from the appropriate dean to be absent from a final examination may receive a grade of AB. The AB automatically becomes F within ten days after the date of the regular examination if testing has not been completed. While the AB remains on the transcript, it is treated as an unsatisfactory grade in determining probation, suspension, or dismissal. The grade of SP is given by the appropriate dean to a student faced with delinquency because of very special circumstances, such as major illness.

**Grade Point Average**

A grade point average (GPA) appears only after graduation on transcripts of undergraduates. The GPA is computed on the basis of those normally graded courses the student completed at the University which are included in the application for graduation. The average is so identified and the courses annotated.

Grade points for each semester hour are assigned on a scale of 4 for A, 3 for B, 2 for C, 1 for D, and zero 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 on the application for graduation earned by the number of normally graded semester hours gives the GPA.

http://catalog.gmu.edu
Classification of Students

Admitted undergraduates are classified as follows:

- Freshman, 0-23 semester hours completed.
- Sophomore, 24-53 semester hours completed.
- Junior, 54-83 semester hours completed.
- Senior, 84 or more semester hours completed.

Grade Reports

Grade reports are sent to the student and to the adviser each semester and summer in which the student is registered, including semesters in which the student withdraws after the end of the drop period. The report includes all courses for that semester and the grades received, the cumulative hours of satisfactory grades, the cumulative hours of unsatisfactory grades, and the cumulative hours of credits completed successfully in courses graded under the S-NC option.

Appeal of Grade

Although it is generally acknowledged that the individual faculty member is the best judge of performance by students in a class, there may be instances in which a student feels a grade has been assigned unfairly. In such cases, the student should ask the instructor to reconsider the grade. If the student remains dissatisfied, the matter may be appealed to the departmental chair. Upon receiving an appeal, the chair should ask the student to return to the instructor for further consultation. If the instructor and the student remain unable to reach a mutually satisfactory agreement and if the chair believes the student may have a legitimate complaint, the chair forms a committee of three faculty members who are peers of the instructor who assigned the grade. The instructor or the student may each challenge and have replaced one of the three members of the committee without giving a reason for the challenge. The committee meets separately with the instructor and with the student to explore the full particulars of the case. Every effort is made to avoid an adversary relationship. After the committee has reviewed the case thoroughly, it issues to the chair (with a copy to the faculty member) a written recommendation including the reasons for its findings. At this time, the faculty member has an opportunity to take the recommended action, if any. If the matter is not resolved at this point, the chair considers the committee recommendation and forwards a recommendation to the dean. If the dean decides that a change of grade is appropriate and the faculty member refuses to make the change, the dean may order the registrar to do so. Chairs do not accept grade appeals after the last day of classes of the next fall or spring semester following the academic period in which the grade is recorded.

Pending Grade Appeal

In select cases, a student may request a delay from the dean in imposing academic suspension because of a pending grade appeal which could change the student's status. An approved delay would allow the student to register.

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

Academic Standing

Honors — The Dean's List

An undergraduate who takes at least 12 credit hours in a semester, receives satisfactory grades in all courses, and receives a grade of A in more than two-thirds of the credit hours merits placement on the Dean's List.

Satisfactory Performance

An undergraduate performs satisfactorily during any academic period (semester or summer session) in which the student receives satisfactory grades in more than two-thirds of the credit hours undertaken during the period.

Academic Warning

An undergraduate receives an academic warning at the end of any academic period in which the student fails to perform satisfactorily, i.e., fails to receive satisfactory grades in more than two-thirds of the credit hours undertaken during the period.

Academic Probation

An undergraduate who receives two warnings during any four consecutive academic periods of enrollment is on probation during the academic period of enrollment following the second warning. (Consecutive academic periods of enrollment are successive periods during which the student enrolled, regardless of whether there were intervening periods during which the student did not enroll.)

Suspension

A student receiving academic warnings in two immediately consecutive periods of enrollment is suspended. The two consecutive periods are extended to three if the student attempts less than 12 credit hours during either of those periods.

Suspension is included in a student's permanent record. Course credits earned at other colleges during the period of suspension from the University (for academic or nonacademic reasons) are not accepted for the degree program.

A student's first suspension will be for two academic periods, unless it is imposed at the end of the summer, in which case it will be for one semester. A second suspension will be for one calendar year, i.e., two regular semesters and a summer. A third suspension results in dismissal.

Effect of Suspension on the Reenrolled Student

A student reenrolling after suspension is on probation for one academic period of enrollment. A warning received at the end of that period results in continuation of probation but not suspension.
Dismissal

A third suspension results in dismissal. An undergraduate is also dismissed upon accumulating 36 hours of unsatisfactory grades. Only unsatisfactory grades received after September 1979 are included in the accumulated hours for dismissal.

Good Academic Standing

A student is in good academic standing unless dismissed, suspended, or on probation.

For the purpose of determining the duration of probation and suspension, an academic period is defined as follows:

Each academic period (semester or summer session) begins on the 15th day following the last scheduled day of final examinations for the previous period. Each academic period ends on the 14th day after the last scheduled day of final examinations.

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

A student whose eligibility for an activity requires the completion of a semester will have fulfilled that requirement when the student's publicly scheduled exams are over, unless the student's continued eligibility depends on the grades received. In the latter case, the student will not become eligible until the end of the semester as defined for probation and suspension purposes.

Effect of Academic Standing on Student Activities

Only students in good academic standing are eligible to hold or run for elective or appointive office in any organization or activity associated with the University, or to participate in any athletic or other activity representing the University on either an intercollegiate or club level, or to serve as a working staff member of any student organization.

The Undergraduate Major

Academic Advising

Each undergraduate is urged to see an academic adviser periodically to discuss academic programs, educational goals, and career plans. In consultation with the adviser, each degree student should plan an academic program to meet the general degree requirements and the specific requirements within a major field. Responsibility for reading the catalog and knowing and fulfilling the requirements of a specific baccalaureate degree rests with the student.

Individual departments establish their own advising processes; each student should check with the appropriate department. Students who have not yet decided on a major or who are considering a change of major are advised in the Academic Advising Center.

Effective with the 1988-89 academic year, every student must meet with an adviser upon entrance into the upper division (completed 60 or more acceptable hours) to adopt a program of study. (See "Advising upon Entrance into the Upper Division" for complete details.)

Selection of a Major

To plan a sound academic program, the undergraduate should select a major as soon as it is practical, but no later than four weeks before the end of the sophomore year. For declaration of a major, a student should confer with the appropriate department chair and/or faculty adviser and file the necessary form.

Change of Major

A student who wishes to change majors should see a faculty adviser or the Academic Advising Center. Departmental sections of this catalog contain requirements for acceptance into the major programs. The student not meeting the requirements may appeal to the department chair for an exception.

Effective with the 1988-89 academic year, once a student has completed 60 hours, a change of major will require an extended session with an adviser in the new major before the change is complete. (See "Advising Upon Entrance into the Upper Division" for complete details.)

Forms for changing a major are available in the Office of the Registrar.

Credit for More than One Undergraduate Major

A student who desires to graduate with a B.A. degree or a B.S. degree in two or more subjects having established degree programs must meet departmental requirements for the major in each field.

The applicant should present to the involved department chairs a detailed program showing the curriculum to be pursued. This program must be approved by the appropriate department chairs and dean(s). Department chairs and dean(s) also must approve all changes.

A student may begin the program at any time that permits its completion prior to the contemplated graduation date.

Baccalaureate Degree Requirements

Literacy Requirement

Literacy, the ability to read, write, and understand complex ideas in prose, is the cornerstone of a liberal education. Everyone involved in training university students should consider literacy of paramount importance. Because literacy is an essential part of university training, in some appropriate form a substantial amount of writing is required in all University programs.

The George Mason literacy requirement applies to all undergraduates, including transfers, who do not already hold baccalaureate degrees. It may be fulfilled in one of two ways: scoring at least 36 on the Test of Standard Written English or earning certification from the Composition Tutorial Center.

http://catalog.gmu.edu
The English Composition Requirement

Because the ability to write well is so important to success in the University and in professional careers, the University requires students to complete two semesters of English composition. Students must enroll in ENGL 101 (or 100) upon admission, unless they have received credit through transfer or proficiency examination. The remaining University composition requirement is satisfied by English 302, or an equivalent transfer course. Students must attain a minimum grade of C in composition courses to fulfill University degree requirements.

Students enrolled in the Plan for Alternative General Education (PAGE) complete the English composition requirement by completing their PAGE program.

Core Requirements

Each undergraduate degree program requires a substantial core from the arts and sciences (24 semester hours). Six semester hours must be in English composition (see English Composition Requirement). Of the remaining 18 hours, 6 must be in each of the following three areas:

<table>
<thead>
<tr>
<th>Area A</th>
<th>Area B</th>
<th>Area C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>Astronomy</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Communication</td>
<td>Biology</td>
<td>Economics</td>
</tr>
<tr>
<td>English</td>
<td>Chemistry</td>
<td>Geography</td>
</tr>
<tr>
<td>Foreign</td>
<td>Computer</td>
<td>Government</td>
</tr>
<tr>
<td>Languages</td>
<td>Science</td>
<td>History</td>
</tr>
<tr>
<td>Literature</td>
<td>Engineering</td>
<td>Linguistics</td>
</tr>
<tr>
<td>Performing</td>
<td>Geology</td>
<td>Psychology</td>
</tr>
<tr>
<td>Arts</td>
<td>Mathematics</td>
<td>Regional</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Physics</td>
<td>Cultures</td>
</tr>
<tr>
<td>Religion</td>
<td>Sociology</td>
<td></td>
</tr>
</tbody>
</table>

Catalog Requirements

Bachelor's degree candidates may elect to graduate under the provisions of the catalog in effect at the time of admission or under the provisions of a catalog subsequent to admission if the student has been enrolled in a continuous progression from date of admission to the receipt of a degree (summer sessions and one-semester absences are excluded). A student who fails to register for two or more consecutive semesters must meet either the requirements of the catalog in effect at the time of initial admission or readmission.

When the University or one of its academic units makes changes in grading procedures and/or the level of qualitative performance expected of its students for acceptance into particular programs, academic standing, or graduation, the changes apply to all students enrolled in the University at the time of the implementation of the change and thereafter. The Special Collections section of the Fenwick Library has a copy of all previous catalogs for use by staff and students. Copies may not be checked out but may be photocopied.

Residence Requirements

At least one-fourth of the total semester hours presented on the degree application must be completed at the University and must include at least 12 semester hours of advanced-level courses (numbered 300 or above) in the major program. In addition, students seeking a bachelor's degree must apply at least 45 hours of upper-division course work (numbered 300 or above) toward graduation requirements.

It is expected that the student's final one-fourth of college study will be completed at the University. However, a student of junior standing who has completed 24 semester hours of advanced-level courses, including 12 upper-level semester hours in the major, may apply to the appropriate dean for permission to complete the remaining degree requirements elsewhere. Such applications must follow the procedures outlined in the section "Credit to be Earned at Other Colleges." Permission is granted only in special circumstances, such as moving from the area or enrolling in an accredited professional school.

A student who gains early admission to an accredited professional school may be granted a George Mason bachelor's degree while enrolled in a professional school if certain conditions are met. In this context, a professional school is defined as a school of dentistry, law, medicine, optometry, osteopathy, or veterinary medicine. Before leaving the University, a student must obtain certification signed by the department chair and the appropriate dean that the residence requirement and all general education and major requirements for the degree have been met. The student also must secure from the dean prior approval of those professional school courses which are to be applied only as elective credits to the total semester hour requirement for the bachelor's degree.

Academic Requirements

To qualify for a degree, a student must have been admitted and must have fulfilled all stated requirements for the specific degree. An undergraduate may present all courses in which satisfactory grades have been received and up to 12 hours of courses in which D grades have been received. However, a student may not use a grade of D in BIS 490 and may not use more than six hours of D grades in the major or in the B.I.S. core of study.

The 12 hours of D grades may be exceeded by an undergraduate provided that all hours of D were earned prior to fall 1979 and that the student achieves a cumulative GPA of 2.00 at or after the beginning of fall 1979.

Students seeking a bachelor's degree must apply at least 45 hours of upper-division course work (numbered 300 or above) toward graduation requirements.

For the purpose of computing the cumulative GPA, all course work attempted at the University must be included except as provided under Semester Excluded from GPA in the 1978-1979 catalog. An undergraduate may petition to exclude from the calculations of the GPA only a semester that occurred prior to fall 1979.

A Graduation Appeals Committee in each college or school considers written appeals from students failing to meet degree or certain area requirements.

Application for Degree

Students who expect to complete graduation degree requirements must secure an Application for Degree form from the Registrar's office, complete it, and return
it to the Office of the Registrar by the date designated on the Academic Calendar. A graduation fee is payable at the time of submission; payment is required each time a new application is submitted.

A person undertaking academic study with the University, including supervised research, must be registered as a student and pay the prescribed charges.

Any student not in attendance at the University who is preparing a thesis under the active supervision of a faculty member, or who wishes to return to receive a degree or take an examination, pays a $15 registration fee for that semester and is exempt from all other tuition and fees.

Second Bachelor's Degree

A second bachelor's degree may be earned, either concurrently or sequentially, by completing all requirements for that degree and by presenting on the degree application an additional 30 semester hours of credit earned at the University not presented toward the first degree.

Graduation with Distinction

A student graduates with distinction from the University when at least 60 semester hours earned at the University are applied toward graduation; all grades applied toward graduation are satisfactory; more than two-thirds of the normally graded semester hours earned at the University toward graduation are graded A; and the student is evaluated by the major department to be outstanding based upon a record of grades and two letters of recommendation from faculty members.

A B.I.S. student presents a petition for graduation with distinction to the B.I.S. Advisory Committee for evaluation rather than to the department of the faculty adviser.

The registrar compiles, by department, percentages of students graduating with distinction since fall semester 1979.

Graduation with Distinction and with Recognition

A student graduates with distinction and with recognition of a distinguished senior project if, in addition to meeting the criteria for graduation with distinction, the student completes a research project or other substantial piece of creative work directed by a faculty member and judged by the student's department to be of distinguished quality. The departmental faculty establishes criteria by which a student graduating with distinction may also attempt to receive this recognition.

A B.I.S. student attempting this recognition is evaluated by the department of the permanent adviser.

The registrar compiles, by department, percentages of students graduating with distinction and recognition since fall semester 1979.

Comprehensive Examinations

Undergraduates who have passed with distinction a voluntary departmental comprehensive examination may have the following notation placed in the remarks section of the transcript: "Voluntary comprehensive examination in (area) passed with distinction (date)."

Commencement

Commencement exercises provide an opportunity for students and their families to share in the conferral of academic degrees. This ceremony represents the culmination of a phase in the formal education of the individual. Degree candidates who do not desire to participate in the formal graduation ceremonies should notify the Office of the Registrar at least six weeks in advance.

Graduate Academic Policies and Procedures

Academic policies and procedures applicable to graduate students appear in a separate Graduate Catalog.

Knowledge of University Policies

Each student is responsible for knowing the rules, regulations, requirements, and academic policies of the University. A student in doubt concerning an academic matter should consult a faculty adviser or dean.
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. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Therefore, students are responsible for understanding the provisions of the code. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Therefore, attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report all alleged violations of the Honor Code to the Honor Committee. Any student who has knowledge of, but does not report, an Honor Code violation may be accused of lying under the Honor Code.

The Honor Committee is independent of the Student Government and the University administration. It is made up of students selected by the student body and has the primary duty of espousing the values of the Honor Code. Its secondary 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 policy regarding the Honor Code. They must also explain the extent to which aid, if any, is permitted on academic work. The complete Honor Code follows:

Honor Code

To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all 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

The Honor Committee is a group of students elected from the student body whose primary and indispensable duty is to instill the concept 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

Duties of the Honor Committee:

The Honor Code of 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 the following: 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 words, the work or the opinions of someone else without proper acknowledgement.

2. Borrowing the sequence of ideas, the arrangement of material, or the pattern of thought of someone else without proper acknowledgement.

C. Lying encompasses the following:

The willful and knowledgeable telling of an untruth, as well as any form of deceit, attempted deceit, 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 counsels during investigation and hearing. This may constitute a second charge, with the committee members who acted as judges during that specific hearing acting as accusers.

D. Stealing encompasses the following:

Taking or appropriating without the 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 University 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

To alleviate misunderstandings, all professors are required to delineate at the beginning of each semester what constitutes a violation of the Honor Code in their classes. This should include an explanation of:

A. The extent to which collaboration or group participation 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 permissible to fulfill course requirements.

C. Guidelines on what constitutes plagiarism, including requirements for citing sources.

All professors are required to send the Honor Committee a written copy of their Honor Code policies, which
will be kept on file. These requirements should also be stated before each test, examination, or other graded work to clarify what is permissible.

Faculty members who witness an Honor Code violation should proceed as outlined under Procedure 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 students to understand their professors’ policies with regard to the Honor Code. It is also the responsibility of students 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 Procedure for Reporting a Violation. This duty is important not only because it enforces the Honor Code, but also because it gives all students the opportunity to express their respect for personal integrity and an honest academic community.

V. Procedure for Reporting a Violation

All students or faculty members 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 parties that they have four working days to contact a member of the Honor Committee and be advised of their rights and options. The Honor Committee shall commence an investigation, which will not involve 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, including members of the Honor Committee, but not including students of the School of Law.

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 chair of the Honor Committee, or by the counsel appointed to that case. The appearance of the accuser is required.

VIII. Verdict

To find a student guilty of an honor violation, there must be a four-fifths majority vote (four to one) for a verdict of "guilty." Clear and convincing evidence must be presented to find the student guilty.

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 which may be given are:

A. Oral reprimand: An oral statement to the student given by the chair of the hearing. 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 in the student’s academic file, but is not made part of the student’s scholastic transcript records.

C. Non-academic probation: Exclusion from holding or running for an elected or appointed office in any organization or activity associated with the University. Ineligibility to participate in any athletic or other activity representing the University on either an intercollegiate or club level, and ineligibility to serve as a working student member of any student organization. This action is noted in the judicial administrator’s file but is not made a part of the student’s scholastic record.

D. Service hours: Library or other supervised University service hours to be completed by a specific time. Upon completion the hold on the student’s records would be removed.

E. Failing grade: Recommendation in writing to the instructor for a grade of F for the work involved, or for the entire course. The student’s permanent record will reflect the academic evaluation made by the instructor.

F. Recommendation of suspension from the University for one or more semesters: A student’s scholastic record would read: “Non-academic suspension from (date) to (date).” The recommendation is made to the Assistant Vice President for Academic Affairs.

G. Recommendation of expulsion from the University: A student’s scholastic record would read: “Non-academic expulsion as of (date).” This penalty will be recommended to the Assistant Vice President for Academic Affairs 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 chair of the Honor Committee within seven working days after the date on which the verdict was rendered.

The written request will be reviewed by at least three voting members who were not involved with the original
case. If a new hearing is granted, no voting member from the original hearing may vote in a second or subsequent hearings of the same case.

XI. Keeping of Records

The records of the hearing shall be kept in the file of the Honor Committee. These records shall include a tape or a full transcript of the hearing and all evidence presented at the hearing. If the evidence belongs to any person other than the accused, 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 nonvoting members. 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 17 as practicable. Four freshmen will be appointed in the fall to serve until the following spring election. One or more clerks appointed by the committee from the student body will serve as aides to the chair.

The chair 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.

A faculty hearing adviser, as a nonvoting member of the committee, must sit with and advise the committee at all hearings. The faculty adviser and faculty hearing 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 chair 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 chair are subject to a 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 or her must present cause to the chair 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 who feels prejudiced as to the facts of the case, is a close friend or relative of the accused, or would not be able to render an impartial judgment shall withdraw from a specific hearing.

XVI. Provision for Amendments

Upon petition of 20 percent of the student body, amendments to or revisions of the Honor Code may be proposed for ratification, said amendments and/or revisions to be 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.
College of Arts and Sciences
College of Arts and Sciences

American Studies
Area Studies
Art
Biology
Chemistry
Classical Studies
Communication
Economics
English
Foreign Languages and Literatures
Geology
History
Mathematical Sciences
PAGE
Performing Arts
Philosophy and Religious Studies
Physics
Psychology
Public Affairs
Sociology and Anthropology

The disciplines within the College's 16 departments represent the core curricula of a modern university. They are designed to be flexible and they cover a wide range of subject matter. Through its programs, the College exposes students to principles of sound reasoning and judgment, while providing the skills for understanding and using information. The College strives to give students some of the knowledge needed in today's world and to develop within them the lifelong process of self-education.

The College offers ample opportunities for double majors that can be tailored to student needs, combining intellectual pursuits with preparation for employment. Faculty advisory committees assist undergraduates who are interested in careers in such fields as medicine, law, and the ministry.

University Requirements

Students should consult the Baccalaureate Degree Requirements section of Academic Policies for information concerning literacy requirement, English composition requirement, catalog requirements, residence requirements, and academic requirements.

Administration

Paula Gilbert Lewis, Acting Dean
Michael R. Gabel, Acting Associate Dean
Evans J. Mandes, Acting Associate Dean
Mary K. Cabell, Assistant Dean for Student Affairs
Thomas H. Hill, Assistant Dean for Student Affairs

Bachelor of Arts Degree Requirements

The general education portion of the bachelor of arts degree offers insights into a broad range of human thought and activity, enabling persons to fill various roles in our society effectively. It provides a foundation for continued learning and personal development.

Students at George Mason meet their general education requirements either by completing the number of hours in the courses listed below or by completing the interdisciplinary courses of the PAGE program.

Through general education, students gain knowledge of the basic disciplines, skill in relating materials within the disciplines, and some understanding of human civilization as a whole. All courses fulfilling general education requirements are intended to combine these elements. Thus, in a single course students should gain basic knowledge of a particular discipline and skill in the methods that produced that knowledge, as well as an understanding of the discipline's common attitudes and its place within human thought and activity.

The courses are grouped below to allow the student to

http://catalog.gmu.edu
exercise certain options among disciplines using similar modes of thought.

Programs of Study

<table>
<thead>
<tr>
<th>Semester Hours</th>
<th>1. Communication</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Written</td>
<td>ENGL 101, 302. Nonnative speakers of English with limited proficiency in the language may substitute ENGL 100 for ENGL 101. Students must attain a minimum grade of C to have ENGL 100, 101, 102, 302 fulfill degree requirements in these courses.</td>
<td>6</td>
</tr>
<tr>
<td>b. Oral</td>
<td>COMM 100, 101,110,120, or 130</td>
<td>3</td>
</tr>
<tr>
<td>c. Foreign Language</td>
<td>The student must demonstrate proficiency in one foreign language offered by the University through the intermediate level, either by examination or course work. International students should consult with an assistant dean about possible waiver of this requirement.</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Humanities</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Literature</td>
<td>Any course in literature at the 200 level or above in English or Foreign Languages and Literatures, and PHIL 253.</td>
</tr>
<tr>
<td>b. Fine Arts</td>
<td>Art, dance, film, music, or theatre (lecture, studio, ensemble, or private lessons).</td>
</tr>
<tr>
<td>c. Philosophy or religious studies</td>
<td>A logic course does not satisfy this requirement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Social Science</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Economics, geography, government, history</td>
<td>Any course in literature at the 200 level or above in English or in Foreign Languages and Literatures, and PHIL 253.</td>
</tr>
<tr>
<td>b. Anthropology, psychology, sociology</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Natural Science</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>A two-semester laboratory science sequence in astronomy, biology, chemistry, geology, or physics. BIOL 124, 125 does not satisfy this requirement. Students who seek to fulfill this requirement by taking a hyphenated course, such as CHEM 103-104 or CHEM 211-212, can receive credit only if both semesters of the course are completed satisfactorily.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Non-Western Culture</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six credits must be earned in courses devoted to non-Western culture. This requirement is waived for a student who has attended for more than four years an indigenous school in a non-Western country. Requests for a waiver should be made through the dean of the College of Arts and Sciences. The following courses, which are designated as meeting this requirement, may also be presented in partial fulfillment of requirements stated in sections I, III, and IV: ANTH 114, 204, 206, 207, 208, 211, 300, 301, 305, 313, 332</td>
<td></td>
</tr>
<tr>
<td>ARTH 180, 280, 319, 320</td>
<td></td>
</tr>
<tr>
<td>ENGL 432, 433, 434</td>
<td></td>
</tr>
<tr>
<td>FREN 451</td>
<td></td>
</tr>
<tr>
<td>GOVT 332, 333</td>
<td></td>
</tr>
<tr>
<td>KORE 450, 451</td>
<td></td>
</tr>
<tr>
<td>LAC 152, 153, 154</td>
<td></td>
</tr>
<tr>
<td>MUSI 103</td>
<td></td>
</tr>
<tr>
<td>RELI 211, 212, 213, 314, 315, 337, 490</td>
<td></td>
</tr>
<tr>
<td>RUSS 353, 354</td>
<td></td>
</tr>
<tr>
<td>THR 327, 357</td>
<td></td>
</tr>
<tr>
<td>VIET 301, 302</td>
<td></td>
</tr>
</tbody>
</table>

7. Major
See appropriate departmental sections of the catalog for required credits.

8. Total minimum upper division hours 45

9. Total minimum semester hours 120

Bachelor of Science Degree Requirements

1. At least 12 semester hours of English and literature
   a. English Composition ENGL 101, 302. Students admitted prior to fall 1983 may substitute ENGL 102 for 302. Nonnative speakers of English with limited proficiency in the language may substitute ENGL 100 for 101. Students must attain a minimum grade of C in order to have ENGL 100, 101, 102, 302 fulfill requirements for these courses. 

2. At least 12 semester hours of course work outside the area of specialization
   a. Twelve hours outside the fields of economics, geography, government, or history if the degree is in one of these fields; six of these hours must be chosen from these fields: astronomy, biology, chemistry, computer science, geology, mathematics, and physics. 
   b. Twelve hours outside the natural sciences or mathematics fields if the degree is in those fields; six of these hours must be chosen from these fields: anthropology, economics, geography, government, history, linguistics, psychology, and sociology. 
   c. Twelve hours outside the fields of anthropology or psychology if the degree is one of these fields; six of these hours must be chosen from these fields: astronomy, biology, chemistry, computer science, geology, mathematics, and physics.
3. Fulfillment of requirements for the major as listed under the respective departments:
   Biology, Chemistry, Economics, Geology, Mathematical Sciences, Physics, Psychology, and Public Administration.

4. Total minimum upper-division hours
   45

5. Total minimum semester hours
   120

Bachelor of Music Degree Requirements

1. General Education
   a. ENGL 101, 302. Nonnative speakers of English with limited proficiency in the language may substitute ENGL 100 for ENGL 101. Students must attain a minimum grade of C in order to have ENGL 100, 101, 102, 302 fulfill degree requirements in these courses.
b. Literature
   Any course in literature at the 200 level or above in English, in Foreign Languages and Literatures, and PHIL 253.
c. Natural Sciences/Mathematics/Computer Science Astronomy, biology, chemistry, computer science, geology, mathematics, physics,
d. Social Sciences
   Anthropology, economics, geography, government, history, linguistics, psychology, sociology.
e. Additional Nonmusic Courses
   8

2. Basic Musicianship
   58

3. Music Concentration
   18

4. Free Electives
   22

5. Total minimum upper-division hours
   45

6. Total minimum semester hours
   130

(Bachelor of Fine Arts Degree Requirements)

1. General Education
   a. ENGL 101, 302. Nonnative speakers of English with limited proficiency in the language may substitute ENGL 100 for ENGL 101. A student must attain a minimum grade of C in order to have ENGL 100, 101, 102, or 302 fulfill degree requirements in these courses.
b. Literature (6). Any course in literature at the 200 level or above in English or in Foreign Languages and Literatures, and PHIL 253.
c. Natural Sciences/Mathematics/Computer Science (6-8). Six to eight credits chosen from the areas of astronomy, biology, chemistry, computer science, geology, mathematics, physics, or logic (PHIL 173, 376). Dance majors must take Biology 124 and 125 to fulfill the Natural Science requirement.
d. Social Sciences (6). Six credits chosen from the areas of anthropology, economics, geography, government, history, linguistics, psychology, or sociology.
e. Additional nonmajor courses (6-8). See major department for recommended list.

2. Major Program
   The Department of Performing Arts offers major programs under the Bachelor of Fine Arts degrees through the Divisions of Dance and Theatre. The Dance division offers a general modern dance major that allows for concentrated study in either performance, choreography, or teaching. The Theatre division offers a major program with emphasis in Acting and Design/Theatre Technology. See the appropriate departmental sections of the catalog for details and the requirements of these major programs.

3. Free Electives
   10-12

4. Total minimum upper-division hours
   45

5. Total minimum semester hours
   130

PAGE

Students enrolled at George Mason University may fulfill their general education requirements through the Plan for Alternative General Education (PAGE).

General Education Requirements/
PAGE Equivalents

PAGE courses correspond to general education requirements as detailed. Note that most PAGE courses contribute to meeting more than one requirement.

<table>
<thead>
<tr>
<th>Equivalent Semester Hours</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Communication</td>
<td></td>
</tr>
</tbody>
</table>
a. Semesters I, II, and III (equivalent to English 101 or 100) | 3 |
b. Semester IV (equivalent to English 302 or 102) | 3 |
c. Semesters I, II, III, and IV (equivalent to Communication 100, 110, 120, or 130) | 3 |
d. Foreign Language (PAGE does not satisfy this requirement.) | 12 |

2. Analytical Reasoning
   PAGE 120 and 125, or Mathematics substitution as approved (equivalent to Logic or Mathematics) | 3 |
3. Humanities
a. PAGE 150, 151, 122, 130
   (equivalent to Literature I)
b. PAGE 152, 153, 123, 131
   (equivalent to Literature II)
c. PAGE 150, 151, 152, 122, 123
   (equivalent to Fine Arts)
d. PAGE 150, 151, 152, 130, 13
   (equivalent to Philosophy or Religion, except logic)

4. Social Science
a. PAGE Semesters II and IV
   (equivalent to Economics, Geography, Government, or History)
b. PAGE Semesters I and III
   (equivalent to Anthropology, Psychology, or Sociology)

5. Natural Science
   PAGE 125, 225, 227, 228, or Mathematics/Science sequence as approved
   (equivalent to two-semester science sequence)

6. Non-Western Culture
a. PAGE 150, 151, 122, 123, 130, 131
   (equivalent to Culture I)
b. PAGE 250, 251, 230
   (equivalent to Culture II)

PAGE Courses Total 45
PAGE Courses total 45 credit hours and fulfill all the general education requirements listed except foreign language.

Physical Education Courses
Activity courses offered by the Department of Health, Sport, and Leisure Studies, College of Education and Human Services, cannot be counted within the hours for a degree in the College of Arts and Sciences.
American Studies

Faculty

Course Work
The American Studies faculty offers all course work designated AMST in the Course Descriptions of this catalog and its supplements, including the following graduate courses offered in support of degree programs in the Graduate School: AMST 502 and 690.

Degree Requirements
American Studies. The interdisciplinary program in American Studies culminates in the conferral of the B.A. degree in American Studies and requires a minimum of 120 hours of course work. All students must satisfy requirements for the B.A. degree at the University and requirements for a major in American Studies. The major requires 36 hours in American Studies divided as follows:

1. American history
Six hours in HIST 121-122.

2. Introductory Seminar
Three hours in AMST 302. It is recommended that students take AMST 302 in the second semester of their sophomore year or in the first semester of their junior year.

3. Disciplinary Concentration
Nine hours in the courses of a single discipline. Three courses from any one of the following approved sets, or other courses approved by adviser.

4. Interdisciplinary Concentration
Nine hours in an interdisciplinary concentration defined by adviser and student or by the specific set of interdisciplinary concentrations the program offers.

Courses should be selected from those designated appropriate to the concentration in the courses AMST 310, 320, 330, and 340 or from courses so designated in the college disciplines. For 1988-89 the program offers specific interdisciplinary concentrations in Urban and Suburban Culture in America, the 1930s in America, Women in American Culture, and Work and Leisure in America.

5. Senior Project
Three hours in AMST 410. A seminar in methodology and completion of a project in the field of the interdisciplinary concentration.

6. AMST Electives
Six additional hours from (a) or (b) below:
   a. AMST 201, 202, 310, 320, 330, 340, 403, 490, 502.
   b. Two courses selected in consultation with the student’s adviser.

American Studies in a Double Major. Many students elect to double major in American Studies and another discipline. Students majoring in anthropology, economics, English, geography, government, history, philosophy, psychology, public administration, or sociology can usually also fulfill the requirements for a second major in American Studies with the minimum 120 hours required for all College of Arts and Sciences degrees. Students wishing to design a double major should discuss their plans with the chair of American Studies. A sample schedule follows.

Sample Schedule for a Double Major in American Studies and History

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>ENGL 206</td>
</tr>
<tr>
<td>HIST 121</td>
<td>HIST 122</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>PHIL 100</td>
<td>SOC 101</td>
</tr>
<tr>
<td>COMM 100</td>
<td>GOVT 204</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 253</td>
<td>SOC 152</td>
</tr>
<tr>
<td>PHIL 173</td>
<td>HIST 301</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science</td>
</tr>
<tr>
<td>AMST 201</td>
<td>AMST 302</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST 320</td>
<td>AMST 310</td>
</tr>
<tr>
<td>ENGL 333</td>
<td>AMST 320</td>
</tr>
<tr>
<td>HIST 300</td>
<td>HIST 333</td>
</tr>
<tr>
<td>HIST 328</td>
<td>HIST 336</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>HIST 352</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST 330</td>
<td>AMST 410</td>
</tr>
<tr>
<td>ENGL 368</td>
<td>HIST 354</td>
</tr>
<tr>
<td>HIST 272</td>
<td>HIST 412</td>
</tr>
<tr>
<td>HIST 435</td>
<td>HIST 499</td>
</tr>
<tr>
<td>MUS 105</td>
<td>AMST 340</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
PAGE Students

The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in American Studies.

Area Studies

During the 1970s, George Mason University offered two area studies degrees: the Bachelor of Arts (B.A.) degree with a major in European studies, and the Bachelor of Arts (B.A.) degree with a major in Latin American studies. Subsequent curriculum reviews led to a change in this pattern. One degree rather than two is now offered — the Bachelor of Arts (B.A.) degree with a major in area studies.

The student selecting this program is able to pursue a bachelor's degree in area studies by focusing on Asian Studies, European Studies, Latin American Studies, Middle East Studies, or Russian Studies. Asian Studies is supervised by a faculty chaired by Dr. Nobuko Tsukui (acting) of the Department of English; European Studies by a faculty chaired by Dr. Amelia Rutledge of the Department of English; Latin American Studies by a faculty chaired by Dr. Martha Francescato of the Department of Foreign Languages and Literatures; and Russian Studies by a faculty chaired by Dr. Leo Hecht of the Department of Foreign Languages and Literatures. (The Asian Studies program is expected to be formally activated in 1988-1989.)

Asian Studies

Faculty

Chu (Education); Chung (Economics); Duara (History); Golomb (Sociology and Anthropology); Ho (Fenwick Library); Hoi (Foreign Languages and Literatures); Liu (Nursing); Mao (Fenwick Library); Nguyen (Public Affairs); Ro (Philosophy and Religious Studies); Saeed (History); Tsukui (English), Acting Chair; Williams (Sociology and Anthropology).

Course Work

The Asian Studies faculty offers all course work designated ASST in the course dictionary of this catalog.

B.A. Degree Requirements with a Major in Area Studies

Asian Studies. The student must present a minimum of 120 semester hours of course work for graduation, including satisfaction of general requirements for the B.A. degree and completion of 42 semester hours of course work in Asian studies as follows:

1. Nine hours in Asian Studies seminars: ASST 450, 460 (A or B), 470. These seminars may be taken in any order. See Asian Studies Courses (ASST) in the Course Descriptions section of this catalog.
2. Thirty-three hours in the following four areas of concentration, at least three hours (or one semester course) to be taken in each of the four areas. At least 18 hours must be earned at the 300 level or above.

a. Humanities
b. Social Sciences
c. Language/literature
d. Cross-cultural studies

Approved Courses

Department of Art: ARTH 280

Department of Education: (with permission of Asian Studies Chair), EDCI 517, 518

Department of English: ENGL 432, 433, 434

Department of Foreign Languages and Literatures:

CHIN 101, 102, 201, 202; JAPA 101, 102, 201, 202;
KORE 361, 362, 450, 451; VIET 301, 302, 361, 362

Department of History: LAC 153; HIST 251, 252, 353, 354, 356, 390, 451, 463, 499

Department of Performing Arts: MUSI 103, 231; THR 327, 356, 357


Department of Public Affairs: GOVT 333

Department of Sociology and Anthropology: ANTH 114, 206, 211, 332

Sample Schedule for a B.A. in Area Studies Asian Studies

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition 3</td>
<td>Natural Science 4</td>
</tr>
<tr>
<td>Natural Science 4</td>
<td>Communication 100 3</td>
</tr>
<tr>
<td>Asian Language 101 (Japanese, Chinese, Korean, Vietnamese) 3</td>
<td>Asian Language 102 3</td>
</tr>
<tr>
<td>Religion 212 3</td>
<td>Music 103 3</td>
</tr>
<tr>
<td>Philosophy 173 3</td>
<td>LAC 153 3</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 114 3</td>
<td>Literature 3</td>
</tr>
<tr>
<td>History 251 3</td>
<td>History 3</td>
</tr>
<tr>
<td>Asian Language 201 3</td>
<td>Asian Language 202 3</td>
</tr>
<tr>
<td>Literature 3</td>
<td>Religion 213 3</td>
</tr>
<tr>
<td>GOVT 132 3</td>
<td>Art History 280 3</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 433 3</td>
<td>English 434 3</td>
</tr>
<tr>
<td>GOVT 333 3</td>
<td>History 354 3</td>
</tr>
<tr>
<td>Anthropology 332 3</td>
<td>ASST 450 3</td>
</tr>
<tr>
<td>English 302 3</td>
<td>Theater 357 3</td>
</tr>
<tr>
<td>Religion 334 3</td>
<td>Religion 338 3</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>History 356 3</td>
<td>History 463 3</td>
</tr>
<tr>
<td>ASST 460 (A or B) 3</td>
<td>ASST 470 3</td>
</tr>
<tr>
<td>Electives 9</td>
<td>Electives 9</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

European Studies

Faculty

Bergoffen, Brown, Brunette, Censer, Clark, Comito, DeNys, Deshmukh, Ebianah, Elston, ffoliott, Foster, Gittler, Gras, Jensen, Kolker, Lytton, Mattusch, Pierce, Rutledge (Chair), Tsukui, Wagner, Zaphiriou.

Course Work

The European Studies faculty offers all course work designated EUST in the Course Descriptions section of this catalog.

B.A. Degree Requirements with a Major in Area Studies

European Studies. The student must present a minimum of 120 semester hours of course work for graduation, including satisfaction of general requirements for the B.A. degree and completion of 45 semester hours of course work in European studies as follows:

1. Twelve hours in interdisciplinary seminars: EUST 300, 350, 400, 450

2. Three hours of European geography: GEOG 320

3. Thirty hours in an area of concentration consisting of two related disciplines, selected from the following list. At least nine of the hours in each discipline must be earned at the 300 level or above.

a. Language (English, French, German, or Spanish) and the fine arts
b. Language and history
c. Language and government
d. Language and philosophy
e. History and the fine arts
f. History and philosophy
g. History and government
h. Government and philosophy

Approved Courses

Department of Economics: ECON 380, 390, 481


Department of Art: ARTH 200, 201, 210, 320, 360, 362, 315, 332, 340, 341, 342, 344, 345, 420


http://catalog.gmu.edu
maximum of six hours earned in musical ensemble and/or private music instruction may be applied to the European Studies program. Private music instruction is applicable to the European Studies program when the student presents evidence to the chair of the European Studies faculty showing that the repertoire studied was predominantly European. Consult Course Descriptions under MUSI for areas of private instruction available.

### Department of Foreign Languages and Literatures:

<table>
<thead>
<tr>
<th>Class</th>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLAS 250</td>
<td>EUST 400</td>
<td>EUST 450</td>
</tr>
<tr>
<td>FREN 101</td>
<td>GOVT 430</td>
<td>GOVT 447</td>
</tr>
<tr>
<td>FREN 441</td>
<td>Electives (300+)</td>
<td>Electives 6</td>
</tr>
</tbody>
</table>

| Electives (300+) | 15 | 15 |

### Department of History:

<table>
<thead>
<tr>
<th>Class</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 101</td>
<td>ENGL 101</td>
<td>ENGL 203</td>
</tr>
<tr>
<td>HIST 301</td>
<td>CHEM 103</td>
<td>CHEM 104</td>
</tr>
<tr>
<td>HIST 302</td>
<td>GERM 101</td>
<td>GERM 102</td>
</tr>
<tr>
<td>MUSI 101</td>
<td>HIST 101</td>
<td>HIST 102</td>
</tr>
<tr>
<td>SOCI 101</td>
<td>MUSI 101</td>
<td>SOC 101</td>
</tr>
</tbody>
</table>

| Electives (300+) | 16 | 16 |

### Department of Philosophy and Religious Studies:

<table>
<thead>
<tr>
<th>Class</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 301</td>
<td>ENGL 302</td>
<td>ENGL 302</td>
</tr>
<tr>
<td>GERM 101</td>
<td>Non-Western culture (300+)</td>
<td>Non-Western culture (300+)</td>
</tr>
<tr>
<td>GERM 201</td>
<td>COMM 120 or 130</td>
<td>COMM 120 or 130</td>
</tr>
<tr>
<td>MATH 106</td>
<td>ARTH 342 (355)</td>
<td>ARTH 344 (356)</td>
</tr>
<tr>
<td>MUSI 181</td>
<td>GEOG 320</td>
<td>HIST 305</td>
</tr>
<tr>
<td>MUSI 181</td>
<td>Elective</td>
<td>MUSI 181</td>
</tr>
</tbody>
</table>

| Electives (300+) | 16 | 16 |

### Department of Public Affairs:

<table>
<thead>
<tr>
<th>Class</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 320</td>
<td>EUST 400</td>
<td>EUST 450</td>
</tr>
<tr>
<td>ARTH 360</td>
<td>HIST 306</td>
<td>HIST 362</td>
</tr>
<tr>
<td>HIST 309</td>
<td>MUSI 381</td>
<td>MUSI 381</td>
</tr>
</tbody>
</table>

### Sample Schedule for a B.A. in Area Studies, European Studies (Concentration: Fine Arts and History)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>ENGL 203</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>CHEM 104</td>
</tr>
<tr>
<td>GERM 101</td>
<td>GERM 102</td>
</tr>
<tr>
<td>HIST 101</td>
<td>HIST 102</td>
</tr>
<tr>
<td>MUSI 101</td>
<td>SOC 101</td>
</tr>
</tbody>
</table>

| Electives (300+) | 16 | 16 |

### Department of Sociology:

<table>
<thead>
<tr>
<th>Class</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 311</td>
<td>ENGL 101</td>
<td>ENGL 203</td>
</tr>
<tr>
<td>SOCI 340</td>
<td>CHEM 103</td>
<td>CHEM 104</td>
</tr>
<tr>
<td>SOCI 340</td>
<td>GERM 101</td>
<td>GERM 102</td>
</tr>
<tr>
<td>SOCI 340</td>
<td>HIST 101</td>
<td>HIST 102</td>
</tr>
<tr>
<td>SOCI 340</td>
<td>MUSI 101</td>
<td>SOC 101</td>
</tr>
</tbody>
</table>

| Electives (300+) | 15 | 15 |

### Sample Schedule for a B.A. in Area Studies, European Studies (Concentration: French and Government)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>FREN 102</td>
</tr>
<tr>
<td>FREN 101</td>
<td>BIOL 104</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>HIST 102</td>
</tr>
<tr>
<td>HIST 101</td>
<td>PHIL 231</td>
</tr>
<tr>
<td>COMM 130</td>
<td>Elective</td>
</tr>
</tbody>
</table>

| 16 | 16 |

<table>
<thead>
<tr>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 101</td>
</tr>
<tr>
<td>BIOL 104</td>
</tr>
<tr>
<td>HIST 102</td>
</tr>
<tr>
<td>PHIL 231</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

| 15 | 15 |

### PAGE Students

The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in English.
Latin American Studies

Faculty
Ailinger, Bradley, Bufill, Clark, Fonseca, Francescato (Chair), Guzman, Hazera, Jacobs, Kelso, Knowles, Marquez, Ruth, Soder.

B.A. Degree Requirements with a Major in Area Studies

Latin American Studies. A student must present a minimum of 120 semester hours of course work for graduation, including satisfaction of general requirements for the B.A. degree. In addition, the student must present 36 semester hours of course work divided to include: (1) eighteen semester hours upper division courses (300-400 level) in a core discipline — any discipline in which a major is possible, except other interdisciplinary studies majors; (2) eighteen semester hours of Latin American-oriented courses other than in the core discipline, including the interdisciplinary seminar on contemporary Latin America (LAS 491). See Course Descriptions in this catalog.

Proficiency in Spanish or Portuguese must be demonstrated either by examination or by completion of the requisite 202 foreign language courses.

Latin American-Oriented Courses

The following courses may be presented to meet the second requirement listed above. Students are advised to consult the Course Descriptions in this catalog for prerequisites for these courses.

Department of Economics: ECON 360, 361

Department of Performing Arts: MUSI 106

Department of Foreign Languages and Literatures: PORT 202

Department of History: HIST 271, 272, 345, 363, 420, 443, 470, 475, 478, LAC 151

Department of Philosophy and Religious Studies: PHIL 301, 302, 303, 334

Department of Public Affairs: GEOG 102, 316 (201); GOVT 132, 331, 336, 340, 430

Department of Sociology: ANTH 202; SOCI 308, 332, 420

Sample Schedule for a B.A. in Area Studies Latin American Studies

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Literature</td>
</tr>
<tr>
<td>PORT or SPAN 101</td>
<td>PORT or SPAN 102</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science</td>
</tr>
<tr>
<td>Oral communication</td>
<td>Logic or math</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

Third Semester

| Literature | PORT or SPAN 201 MUSI 106* Core discipline prereq. HIST 271* Core discipline prereq. | 15 |
| ENGL 302    | PORT or SPAN 202 HIST 272* GEOG 316 | 15 |
| 3           | 3                                    |    |
| 3           | 3                                    |    |

Fourth Semester

| Literature | PORT or SPAN 201 MUSI 106* Core discipline prereq. HIST 271* Core discipline prereq. | 15 |
| ENGL 302    | PORT or SPAN 202 HIST 272* GEOG 316 | 15 |
| 3           | 3                                    |    |
| 3           | 3                                    |    |

Fifth Semester

| Core discipline (300) Core discipline (300) Philosophy or religion Non-Western culture Elective | 15 |
| 3 | 3 | 3 | 3 | 3 | 15 |

Sixth Semester

| Core discipline (300) Core discipline (300) Philosophy or religion Non-Western culture Elective | 15 |
| 3 | 3 | 3 | 3 | 3 | 15 |

Seventh Semester

| Core discipline (400) Anth., psych., or soc. Electives (300 + ) | 16 |
| 3 | 3 | 9 | 15 |

Eighth Semester

| Core discipline (400) Anth., psych., or soc. Electives (300 + ) | 16 |
| 3 | 3 | 9 | 15 |

* Suggested courses. Students electing these courses will fulfill the requirement for 18 hours of Latin American-oriented courses, the general B.A. requirements for fine arts and social science, and partially fulfill the non-Western culture requirement.

Middle East Studies

Faculty
Avruch (Sociology and Anthropology); Bakhash (History); Dawisha (Public Affairs); Friedlander (Public Affairs); Haddad (Foreign Languages and Literatures); Holsinger (History); Kramer (Public Affairs); Robbins (Foreign Languages and Literatures); Saeed (History)

Course Work

The Middle East faculty offers all course work designated MEST in the Course Descriptions of this catalog.

B.A. Degree Requirements with a Major in Area Studies

Middle East Studies. The student must present a minimum of 120 semester hours of course work for graduation, including satisfaction of general requirements for the B.A. degree and completion of 42 semester hours of course work in Middle East studies as follows:

1. Six hours in Middle East Studies seminars: MEST 300 and 400
2. Six hours in History of the Middle East: HIST 281, 282
3. Three hours in Anthropology of the Middle East: ANTH 207
4. Three hours in Government of the Middle East: GOVT 332

5. Six hours in Philosophy and Theology of the Middle East: RELI 211, 374

6. Twelve hours in Foreign Languages of the Middle East: ARAB 101, 102, 201, 202 or HEBR 101, 102, 201, 202

Sample Schedule for a B.A. in Area Studies Middle East Studies

First Semester
- ME language 101 3
- ENGL 101 3
- Science 4
- PHIL 173 3
- HIST 101 3

Second Semester
- Science 4
- COM 100 or 101, 110, 120, 130 3
- ME language 3
- ANTH 114 3
- RELI 211 3

Third Semester
- ME language 201 3
- HIST 281 3
- ME seminar 300 3
- ENGL (Lit) 3
- GOVT 132 or 133 3

Fourth Semester
- ME language 202 3
- HIST 282 3
- ANTH 207 3
- ECON 103 or 104 3
- ENGL (Lit) 3

Fifth Semester
- ENGL 302 3
- GOVT 332 3
- ANTH 332 3
- GEOG 325 (ME) 3
- ARTH 319, 320 (ME) 3

Sixth Semester
- HIST 456 3
- SOCi of ME 3
- ELEC (upper level) 3

Seventh Semester
- GOVT (Per. Gulf) 3
- PHIL or RELI 3
- EDUC of ME 3
- ECON 380 3
- HIST (Islamic Thought) 3

Eighth Semester
- ME seminar (400) 3
- GOVT (Conf) 3
- HIST ELEC 3
- SOCi or ANTH (ME) 3
- ART, PHIL, RELI 3

Russian Studies

Faculty
Andrews (Public Affairs), Alexeev (Economics), Clark (Public Affairs), Hecht (Foreign Languages and Literatures) (Chair), Jensen (History), Lavoie (Economics), Levine (Foreign Languages and Literatures)

B.A. Degree Requirements with a Major in Area Studies

Russian Studies. Two principal directions are possible within this degree program: Area (Russian) studies as one element of a double major, or Area (Russian) Studies as a single degree program. In the first option, students must fulfill all requirements of the Area (Russian) Studies program as noted below. Students must also fulfill requirements of the second major. Obvious combinations with Area (Russian) Studies may be geography, history, international studies, and economics. This program may be accomplished within a four-year period and is recommended for most students who intend to seek employment in government, industry, or journalism.

The second option is recommended primarily for students who intend to continue toward graduate work in Russian, who are interested in careers as translators, or who are studying for self-enrichment.

All degree students must present a minimum of 120 semester hours of course work for graduation, to include satisfaction of the general requirements for the B.A. degree, and the following:

a. Russian language through the intermediate level through course work or testing
b. RUSS 380 and 381

c. Either RUSS 480 or 481 (preferably both)
d. Russian literature (two courses). (May be used to satisfy the literature requirement for the B.A. degree)
e. Three additional upper-division courses bearing the RUSS designator, of which two must be selected from the following list: 303, 310, 311, 401, 410, and 480 or 481 (whichever is not applied to the basic requirement)
f. Either RUSS 353 or HIST 328 (may be used to satisfy the non-Western culture requirement for the B.A. degree)
g. Either RUSS 354 or HIST 329 (may be used to satisfy the non-Western culture requirement for the B.A. degree)
h. GEOG 330.

Note: Qualified students are encouraged to participate in study abroad programs in the Soviet Union, e.g., at Leningrad State University or the Pushkin Language Institute in Moscow. Students are asked to consult with Professor Levine or Professor Hecht, either of whom will assist them in the application process.

Courses

Department of Foreign Languages and Literatures: RUSS 101, 102, 109, 201, 202, 209 (subject to language proficiency examination); RUSS 252, 300, 303, 310, 311, 325, 326, 327, 353, 354, 380, 381, 401, 402, 407, 410, 415, 480, 481, 490, 491

Department of History: HIST 328, 329

Department of Public Affairs: GEOG 330

Cognate Courses: ANTH 114; ARTH 360, 362; ECON 380; EDUC 435; ENGL 300, 377, 378, 391; EUST 300, 350, 400, 450; GEOG 103; GOVT 132; MKTG 307; THR 351, 352

Sample Schedule for a B.A. in Area Studies

Russian Studies (Single major with a Concentration in Language and Literature)

First Semester
- ENGL 101 3
- RUSS 101 3
- COMM 100 3
- ARTH 120 3
- SOCI 101 3

Second Semester
- MUSI 103 3
- RUSS 102 3
- PHIL 111 3
- PSYC 100 3
- MATH 106 3

15 15
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Semester</td>
<td></td>
<td>Fourth Semester</td>
<td></td>
</tr>
<tr>
<td>RUSS 201</td>
<td>3</td>
<td>BIOL 104</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>4</td>
<td>RUSS 202</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 330</td>
<td>3</td>
<td>RUSS 353</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 132</td>
<td>3</td>
<td>ECON 104</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 326</td>
<td>3</td>
<td>THR 160</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Fifth Semester</td>
<td></td>
<td>Sixth Semester</td>
<td></td>
</tr>
<tr>
<td>RUSS 252</td>
<td>3</td>
<td>Elective</td>
<td>6</td>
</tr>
<tr>
<td>RUSS 310</td>
<td>3</td>
<td>RUSS 354</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>3</td>
<td>RUSS 381</td>
<td>3</td>
</tr>
<tr>
<td>HIST 328</td>
<td>3</td>
<td>RUSS 311</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 380</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Seventh Semester</td>
<td></td>
<td>Eighth Semester</td>
<td></td>
</tr>
<tr>
<td>THR 270</td>
<td>3</td>
<td>RUSS 410</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 303</td>
<td>3</td>
<td>RUSS 415</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 480</td>
<td>3</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 407</td>
<td>3</td>
<td>RUSS 300</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 401</td>
<td>3</td>
<td>RUSS 481</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

**Art**

**Faculty**

*Associate Professors:* Clapsaddle, ffolliott, Hammond, Kravitz, Mattusch (Chair), Ward

*Assistant Professors:* deJesus, Mones-Hattal, Todd

*Lecturers:* Antholt, Denker, Kaz-Jepsen, Kendall, Sham, Sherman, Zahn

**Course Work**

This department offers all course work designated ARTH and ARTS in the Course Descriptions section of this catalog.

**Degree Requirements**

**B.A. Degree with a Major in Art.** The major program in art prepares students for graduate study in studio art or art history, as well as for research and professional work in art. Students may choose to concentrate in art history or art studio.

**Art History.** In addition to the general degree requirements for a B.A. degree, students concentrating in art history must complete a minimum of 3 hours of design or drawing; 39 semester hours of art history, including 6 hours at the 100 or 200 level, 24 hours at the 300 level and 6 hours at the 400 level or above. Up to three credits in AMST or EUST may be applied toward requirements for the major with departmental approval. Students contemplating graduate study in art history should acquire a reading knowledge of French and/or German.

Concentration in Art History (39 hours)

Visual Thinking (3), or Arts Elective (3) with permission of the department

Art History Electives at the 100 or 200 level (6)

Art History Electives at the 300 level (24)

Art History Electives at the 400 level or above (6)

Forty-five hours at the 300 level or above are required for graduation. These may be taken in any department.
### Sample Schedule for Concentration in Art History

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbols &amp; Stories in Western Art</td>
<td>Survey of Western Art 3</td>
</tr>
<tr>
<td>Survey of Western Art</td>
<td>Greek Art 3</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Mathematics or logic 3</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Non-Western culture 3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roman Art</td>
<td>Nineteenth-Century Art 3</td>
</tr>
<tr>
<td>Literature</td>
<td>Art history elective 3</td>
</tr>
<tr>
<td>Natural science</td>
<td>Foreign language 3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>HIST 102 3</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Natural science 4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medieval Art</td>
<td>High Ren. Art 3</td>
</tr>
<tr>
<td>Early Ren. Art</td>
<td>Baroque Art 3</td>
</tr>
<tr>
<td>Social science</td>
<td>ENGL 302 3</td>
</tr>
<tr>
<td>Drawing or design</td>
<td>Social science 3</td>
</tr>
<tr>
<td>Literature</td>
<td>Elective 4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twentieth-Century Art</td>
<td>400-level art history 3</td>
</tr>
<tr>
<td>400-level art history</td>
<td>PHIL 356 3</td>
</tr>
<tr>
<td>Elective</td>
<td>Electives 6</td>
</tr>
<tr>
<td>Oral communication</td>
<td>Elective 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Sample Schedule for Studio Art Concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Thinking</td>
<td>Art History 3</td>
</tr>
<tr>
<td>Studio</td>
<td>Studio 3</td>
</tr>
<tr>
<td>Fundamentals I</td>
<td>Fundamentals II 3</td>
</tr>
<tr>
<td>English 101</td>
<td>Non-Western culture 3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language 3</td>
</tr>
<tr>
<td>Social science</td>
<td>Social science 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art history</td>
<td>Oral Communication 3</td>
</tr>
<tr>
<td>Drawing I</td>
<td>Drawing II 3</td>
</tr>
<tr>
<td>Sculpture I</td>
<td>Sculpture II 3</td>
</tr>
<tr>
<td>Literature</td>
<td>Literature 3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printmaking I</td>
<td>Printmaking II 3</td>
</tr>
<tr>
<td>Painting I</td>
<td>Painting II 3</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science 3</td>
</tr>
<tr>
<td>Social science</td>
<td>Social science 3</td>
</tr>
<tr>
<td>English 302</td>
<td>English 302 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinhole</td>
<td>Color Slide 3</td>
</tr>
<tr>
<td>Photography Studio or Art History electives</td>
<td>Graphic Design 3</td>
</tr>
<tr>
<td>PHIL 356</td>
<td>Studio or Art History 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Courses in support of Graduate Programs.

Although a graduate degree program in ARTH is not currently available, these courses are offered in support of other graduate programs: ARTH 592, 593, 596, 599. See the Course Descriptions section of this catalog.

**Art Studio.** In addition to general requirements for a B.A. degree, students concentrating in studio art must complete Visual Thinking (3 hours); Studio Fundamentals I and II (6 hours); Survey of Western Art or two art history courses at the 300 level; 21 hours of studio art courses at the 300 level; and 6 hours of studio art courses at the 400 level or above. Certain courses outside the Art Department may be presented for credit toward the ARTS major with departmental approval.

Concentration in studio art (42 hours required)

Visual Thinking (3 hours)
Studio Fundamentals I and II (6 hours)
Survey of Western Art or two art history courses at the 300 level (6 hours)
Studio art electives at the 300 level (21 hours)
Studio art electives at the 400 level or above (6 hours)

Forty-five hours at the 300 level or above are required for graduation. These may be taken in any department.
BA/SIC (Bachelor of Arts and Sciences Integrated Curriculum)

Faculty
ffollott and Mandes (co-directors), Adamkewicz, Albanese, Avruch, Bergoffen, DeNys, Friedlander, Holman, Holsinger, Horton, Jacobs, Jordan, Kiley, Kolker, Kuebrich, Levy, Looney, Lytton, Mose, Nelson, Rader, Radner (team leader), Rosenzweig, Smith, Stanley, Todd, Ward

Aims of BA/SIC Program
George Mason University is largely a nonresidential University drawing students of varying ages and backgrounds. The BA/SIC program is founded on the premise that the optimal baccalaureate degree for all students is not just an accumulation of miscellaneous credits. Ideally, students will follow a coherent curriculum, and the BA/SIC program is designed to help them do this. It aims to provide students with a setting in which they can integrate knowledge in different disciplines by taking pre-set clusters of 100- and 200-level courses, each of which fulfills requirements for the baccalaureate degree. Assignments in each cluster are designed to explore relationships among the disciplines of science, social science, and humanities. Like all required general education courses, BA/SIC courses seek to develop critical thinking and foster analytical problem-solving and decision-making skills. In addition, students will have an opportunity for increased interaction with faculty members through smaller classes and monthly luncheon meetings with the BA/SIC faculty. The structure of the BA/SIC curriculum will encourage the student to sustain a more active role in the learning process.

The BA/SIC program is funded through the State of Virginia's Funds for Excellence in Higher Education.

Academic Policies and Procedures Unique to BA/SIC

Admission: Admission to the BA/SIC program is open to all full- and part-time undergraduate students on a space-available basis.

Enrollment: Each BA/SIC cluster of courses is assigned a package number. Students enrolling in a BA/SIC package are automatically enrolled in each of the courses assigned to that package. Students are expected to have met course prerequisites for all BA/SIC course offerings.

Majors: The BA/SIC clusters are individually designed to meet the general education requirements for a bachelor of arts or a bachelor of science degree. Not all clusters are appropriate for both degrees. Because the general education requirements differ for these two degree programs, students should verify that the cluster in which they are enrolling satisfies the appropriate degree requirements.

Failures
George Mason University has policies on unsatisfactory work (grades D or F) and on incompletes that apply to all students in the University. For further information, see the Grading Policies section of this catalog.

How BA/SIC Differs from PAGE
BA/SIC is appropriate for any undergraduate student who needs to fulfill required general education courses. Thus, the BA/SIC program meets the needs of the newly admitted freshman and of the continuing student, regardless of the number of credit hours accumulated. In addition, BA/SIC students are free to enroll in courses outside of the BA/SIC curriculum.
Biology

Faculty

Professors: Emsley, Ernst, Hart, Johnston, Shaffer, Stanley, Taub

Associate Professors: Andrykovitch, Bradley, Brown, Jones, Kaplan, Kelso, Lawrey, Rockwood (Chair), Royt, Sherald, Skog, Torzilli, Wilson

Assistant Professors: Adamkewicz, Birchard, deFur, Gretz, Heliotis, Jonas, Oates, Toth-Allen

Adjunct Professors: Cook, O’Brien

Lecturers: Bright, Egghart, Saab, Yanosky

Course Work

This department offers all course work designated BIOL and MTCH in the Course Descriptions section of this catalog.

Opportunities in Biology

The B.A. or B.S. in biology provides a sound liberal education with substantial experience in quantitative and analytical thought along with preparation for a related profession. In addition to the strong background necessary for graduate study in the many fields of biological science, the broad course work selection at George Mason allows students to concentrate in the following career-related areas: environmental management, microbiology, molecular biology, biotechnology, genetics, secondary education, natural history, and medical technology. Alternatively, students may prepare for graduate-level studies in medicine, dentistry, veterinary medicine, wildlife management, fisheries biology, or marine science. Suggested courses for each of the above may be obtained in person or requested by mail or phone from the departmental office, (703) 323-2181.

Degree Requirements

B.A. Degree with a Major in Biology. In addition to the general requirements for this degree established by the College of Arts and Sciences, candidates must present 32 hours of biology. These must include BIOL 113, 303, 304, 307, 311, and 383. In addition, candidates must complete CHEM 211-212 and one of the following combinations: MATH 113, 114, 113-114; 110-113; or 110-111. Students expecting to enter graduate or professional school are strongly urged to complete MATH 113 and 114. Organic chemistry and PHYS 106, 107, or 343, 344, 345, 346 are recommended.

B.S. Degree with a Major in Biology. In addition to the college requirements, candidates must present 44 hours of biology. These must include BIOL 113, 303, 304, 307, 311, and 383. Candidates must also complete CHEM 211-212, 313-314, 315, and 318 or 320, PHYS 106, 107 or PHYS 343, 344, 345, 346 and at least nine hours from among the following, including at least two math courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 110, 111</td>
<td>6</td>
</tr>
<tr>
<td>MATH 113, 114</td>
<td>8</td>
</tr>
<tr>
<td>CS 103</td>
<td>3</td>
</tr>
<tr>
<td>STAT 262</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 312</td>
<td>4</td>
</tr>
</tbody>
</table>

Sample Schedule for B.A. with Major in Biology

<table>
<thead>
<tr>
<th>Semester</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>ENGL 101</td>
<td>Social Science or</td>
</tr>
<tr>
<td></td>
<td>MATH 110 or 113</td>
<td>non-Western</td>
</tr>
<tr>
<td></td>
<td>CHEM 211</td>
<td>elective</td>
</tr>
<tr>
<td></td>
<td>BIOL 113</td>
<td>MATH 111 or 114</td>
</tr>
<tr>
<td></td>
<td>Biology elective</td>
<td>CHEM 212</td>
</tr>
<tr>
<td></td>
<td>Biology elective</td>
<td>BIOL 303 or 114</td>
</tr>
<tr>
<td></td>
<td>14-15</td>
<td>14-15</td>
</tr>
<tr>
<td>2nd</td>
<td>Literature</td>
<td>Literature</td>
</tr>
<tr>
<td></td>
<td>Biology 304</td>
<td>Oral communication</td>
</tr>
<tr>
<td></td>
<td>Biology elective</td>
<td>Biology 303 or elec.</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>3rd</td>
<td>Social science or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>non-Western</td>
<td></td>
</tr>
<tr>
<td></td>
<td>elective</td>
<td>Science or</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>4th</td>
<td>Biological elective,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300 or 400 level</td>
<td>Biology elective,</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>5th</td>
<td>Social science or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>non-Western</td>
<td></td>
</tr>
<tr>
<td></td>
<td>elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>15-17</td>
</tr>
</tbody>
</table>

Sample Schedule for B.S. with Major in Biology

<table>
<thead>
<tr>
<th>Semester</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>BIOL 113</td>
<td>BIOL 303 or 114</td>
</tr>
<tr>
<td></td>
<td>CHEM 211</td>
<td>CHEM 212</td>
</tr>
<tr>
<td></td>
<td>ENGL 101</td>
<td>Nonsci. elective</td>
</tr>
<tr>
<td></td>
<td>MATH 110 or 113</td>
<td>MATH 111 or 114</td>
</tr>
<tr>
<td></td>
<td>14-15</td>
<td>14-15</td>
</tr>
<tr>
<td>2nd</td>
<td>Biology 304</td>
<td>Biology 303 or elec.</td>
</tr>
<tr>
<td></td>
<td>CHEM 313 and 315</td>
<td>CHEM 314 and 318</td>
</tr>
<tr>
<td></td>
<td>Literature</td>
<td>or 320</td>
</tr>
<tr>
<td></td>
<td>Social Science elec.</td>
<td>Social Science elec.</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
Courses Approved for Undergraduate Biology

Major Credit: GEOL 202, 307, 309, CHEM 563, 564, 565

Advising

All biology and medical technology majors must have an adviser's signature to register.

Transfer Students Residence Requirement

Students majoring in biology are required to complete 16 semester hours of credit for the major at the 300 and 400 level at the University.

PAGE Students

The general education and mathematics requirements for the B.A. and B.S. degrees are satisfied by successful completion of the Program for Alternative General Education (PAGE). See the PAGE office (222 Thompson) for sample schedules for majors in biology.

Pre-Medical, Pre-Dental, and Pre-Veterinary Students

Students planning to enter medical, dental, or veterinary schools may choose to major in biology. The specific requirements for admission to these schools vary considerably and often may be met by either a B.A. or a B.S. degree. Most programs, however, do require applicants to complete organic chemistry (CHEM 313-314, 315 and 318 or 320) and a year of physics (PHYS 341-342). A course in calculus is required by some and highly recommended by others. Some schools prefer students with more extensive backgrounds in biological or physical sciences, while others indicate that the undergraduate years are better devoted to humanistic pursuits that are unavailable in professional schools. Because these schools vary both in their philosophies and in their specific requirements, it is wise for the student to become aware of such information well in advance of applying for admission. The Department of Biology Health Sciences Advisor may be contacted for assistance and for information about the University Health Sciences Advisory Committee.

Students transferring to an accredited medical, dental, or veterinary school should refer to the Residence Requirements section of this catalog.

Secondary Teacher Certification

Students who wish to become secondary school teachers of biology are required to earn the B.S. degree. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

Students are required to consult with the Biology Department Secondary Education Adviser and the appropriate discipline adviser in the Department of Education. Grades of C or better in biology courses are required for students teaching in biology. Similarly, grades of C or better are required in all science courses for students teaching in general science.

Environmental Management Certificate

The Department of Biology offers an undergraduate certificate program in environmental management for students interested in environmental issues. The program consists of 27 hours of course work, most of which could be counted with appropriate planning toward the fulfillment of B.S. or B.A. requirements in biology. The curriculum provides a substantive appreciation of the biological, physical, and social aspects of environmental problems and methods for their analysis and resolution. It should particularly interest students wishing to pursue graduate work or seeking employment in the environmental field. All biology majors are eligible to enroll. For further information please contact the certificate coordinator, Dr. Francis Heliotis, Room 3037 A-III, (703) 323-2181.

Biology for Nonmajors

Students in the College of Arts and Sciences who are not majoring in science or mathematics, and students in the School of Business Administration who wish to fulfill their natural science requirement with a two-semester laboratory sequence in biology should enroll in BIOL 103, 104. Exceptions include candidates for the B.S. in psychology, who must take BIOL 113, 114. Students in the College of Education and Human Services normally fulfill their biology requirements as follows: Elementary Education majors: BIOL 151; Physical Education majors: BIOL 124, 125; Health Education majors: BIOL 103, 104, 124, 125, and 261; Nursing majors: BIOL 124, 125, and 261.

Students who decide to major in biology after completing one or more of the above courses should consult the undergraduate coordinator of the Department of Biology when planning their academic program. The department offers a variety of general interest nonmajor courses for those seeking additional elective credit. Students who have completed one year of nonmajor biology also qualify for a number of advanced biology courses.

B.S. Degree with a Major in Medical Technology

This program requires the equivalent of three years of full-time preprofessional study at the college level preceding a senior year of professional education in an affiliated school of medical technology. All affiliated schools are accredited by the Committee on Allied Health and Education Accreditation of the American Medical Association (CAHEA).
Responsibility for applying to schools of medical technology and gaining admission rests with the students. However, guidance is provided by the Medical Technology Program Director in the Department of Biology. Admission to schools of medical technology is selective. Candidates should strive for strong academic standing. Students who fail to gain admission to a CAHEA-approved school will be unable to complete the degree program. Such students may transfer to a biology major without loss of credits.

Application to medical technology schools should be initiated about a year before the desired entrance date. This fact, coupled with the large number of required courses in the preprofessional curriculum, makes it imperative that students in the program consult regularly with their faculty advisers. All medical technology majors and prospective majors are urged to enroll in MTCH 200 as early as possible. This course provides information on the profession and on the educational demands placed on candidates.

Students should be aware that the senior year spent off campus requires the following special interpretation of University policies: Transfer students must present at least 16 hours of 300- or 400-level biology or chemistry taken at George Mason University. Students may present no more than six hours of D in the biology and chemistry courses required in the three years of preprofessional study. No unsatisfactory grades may be presented for courses in the senior year of professional study. Transfer students entering with more than 45 hours of transfer credit are often unable to complete the preprofessional phase of their program in the usual three years of full-time study.

Senior students are registered at the University through special procedures. For details consult the Program Director.

In addition to the college requirements for bachelor of science degrees and MTCH 200, candidates for the B.S. with major in medical technology must present the following courses in their preprofessional programs:

1. Biology, a minimum of 20 hours, including BIOL 113, 302, 303, 383, and 452;
2. Chemistry, a minimum of 22 hours, including CHEM 211-212, 313, 314, 315, either 318 or 320, and 321;
3. Mathematics, a minimum of six hours. (STAT 250 recommended, MATH 106 not applicable.)

Students are encouraged to elect additional basic science courses during their preprofessional years. Recommended are: BIOL 311, 380, 465, CS 103, CHEM 563, 564, 565, 566, PHYS 106, 107.

The professional study during the senior year requires 30 semester hours of course work, including MTCH 401, 402, 403, 404, 405, and 406. The distribution of credit hours in these courses varies with the school of medical technology. Thirty is the maximum number of hours of professional credit that may be applied toward the degree.

---

Sample Schedule for a B.S. with a Major in Medical Technology

<table>
<thead>
<tr>
<th>Preprofessional Phase:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
</tr>
<tr>
<td>CHEM 211</td>
</tr>
<tr>
<td>BIOL 113</td>
</tr>
<tr>
<td>MATH 110 or 113</td>
</tr>
<tr>
<td>ENGL 101</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3-4</td>
</tr>
<tr>
<td>14-15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Third Semester</strong></th>
<th><strong>Fourth Semester</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 313 and 315</td>
<td>CHEM 314 and 318</td>
</tr>
<tr>
<td>CS 103</td>
<td>or 320</td>
</tr>
<tr>
<td>Nonscience elective</td>
<td>BIOL 302</td>
</tr>
<tr>
<td>Literature</td>
<td>Literature</td>
</tr>
<tr>
<td>Social Science elec.*</td>
<td>Social Science elec.*</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sixth Semester</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 321</td>
</tr>
<tr>
<td>ENGL 302</td>
</tr>
<tr>
<td>BIOL 303</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Fifth Semester</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 321</td>
</tr>
<tr>
<td>ENGL 302</td>
</tr>
<tr>
<td>BIOL 303</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

*Anthropology, economics, geography, government, history, linguistics, psychology, or sociology.

**Professional Phase:** Twelve months' clinical education at an affiliated school of medical technology.

---

The Major in Medical Technology as a Second Bachelor's Degree

While the standard program for medical technologists is three years on campus followed by a fourth year at a clinical affiliate (3 + 1), many students elect to complete a bachelor's degree before entering the clinical program (4 + 1). Students who have completed a B.S. with a major in biology or chemistry at GMU and who then undertake a fifth year at a clinical affiliate may be readily eligible for a second bachelor's degree with a major in medical technology. Students wishing to receive the second degree must make application before entering their fifth year. For further information contact a medical technology adviser.

**Biology Clubs and Societies**

Beta-Beta-Beta Biological Honor Society: Active members must have completed at least 54 credit hours and have a 3.0 biology GPA with an overall 3.0. The goal of this organization is to promote scholarship, research, and dissemination of biological knowledge.

Biology Club: The club functions as both a social and informational network for all interested students. In addition it serves the Biology Department by sponsoring a seminar program and working at University functions.

Premedical Society: The Premedical Society is a student support group providing professional school tours, educational programs, and lectures on health
topics and on the professional school admissions process to students interested in health-related fields such as medicine and dentistry.

For more information contact the Biology Department in Academic Ill.

Electron Microscopy Laboratory

This facility provides high-resolution transmission and scanning electron microscopic facilities for the University community. The laboratory supports faculty research in such areas as investigations of fine structure of marine bacteria, algal polysaccharide immunocytochemistry, fern ultrastructure, and fine structure of epithelial and muscle cells in animals, and also serves several local agencies. An ultrastructure course offered each year provides graduate and undergraduate instruction for use of the facility.

Chemistry

Faculty

Professors: Cozzens, Meites (Chair), Mushrush, Stalick

Associate Professors: Chen, Davies, Davis, Roth, Slayden

Assistant Professors: Hussam, Johnson, Weber

Lecturers: Burton, Caulder, Chang, Jones, Kang, Kianpour, Maturi, Russ, Sayala, Snead, Thompson

Course Work

This department offers all course work designated CHEM in the Course Descriptions of this catalog.

Degree Requirements

B.A. Degree with a Major in Chemistry. This program, when coordinated with the necessary courses in education, meets requirements for state certification in chemistry for secondary teachers. It also meets requirements for entrance to medical and other professional schools (see below). In addition to general degree requirements, a minimum of 37 semester hours in chemistry is required for a bachelor of arts degree with a major in chemistry. These must include CHEM 211-212, 313-314, 315, 318, 320, 321, 331, 332, 336, and 337. Additional minimum requirements include MATH 113, 114, and 213, and PHYS 343-346.

B.S. Degree with a Major in Chemistry. This program is accredited by the American Chemical Society; students completing the program are certified to the Society. Students planning professional careers in chemistry should choose the B.S. program.

Minimum course requirements are as follows:

Chemistry ........................................ 49
Mathematics ...................................... 14
Physics ........................................... 8
Other ............................................. 49
Total ............................................ 120

Required courses in chemistry include those indicated for the B.A. degree plus CHEM 422, 441, and 445. Mathematics must include MATH 113, 114, 213, and 304. Physics must include either PHYS 343-346 or PHYS 250, 350, 351, 352, and 353. The latter sequence is recommended for students planning to attend graduate school. In addition, CS 161 or 103 or ENGR 110 is required.
### Sample Schedule for B.A. in Chemistry

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>Elective (e.g., BIOL 113)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>4</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Elective (e.g., BIOL 114)</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 313</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>2</td>
</tr>
<tr>
<td>MATH 213</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 343</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 344</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 320</td>
<td>2</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 345</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 346</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 321</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Foreign language</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 332</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 336</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM Elective</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 337</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Foreign language</td>
<td>3</td>
</tr>
<tr>
<td>CHEM Elective</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
<tr>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

121 hours total

### Pre-Medical, Pre-Dental, and Pre-Veterinary Students

Students planning medical, dental, or veterinary careers may meet the requirements of these professional schools by majoring in chemistry. Such students should choose the B.A. program and should consult with the premedical adviser for chemistry.

### Requirements for Nursing Program

The laboratory science requirement for the B.A. and the chemistry requirement for nursing are satisfied by CHEM 103-104.

### Sample Schedule for B.S. in Chemistry

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>CS 161</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>4</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 213</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 343</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 315</td>
<td>2</td>
</tr>
<tr>
<td>CHEM Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>PHYS 344</td>
<td>1</td>
</tr>
<tr>
<td>MATH 304</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 345</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 320</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 346</td>
<td>1</td>
</tr>
<tr>
<td>14-15</td>
<td>14</td>
</tr>
</tbody>
</table>

### Transfer Students

For students majoring in chemistry, transfer credit ordinarily will not be allowed for courses in organic chemistry numbered below 300, i.e., those courses taught at the freshman or sophomore level. Credit for such courses may be obtained by passing an examination administered by the Department of Chemistry.

### Graduate Programs

In conjunction with the Departments of Biology, Electrical and Computer Engineering, and Geology, the Department of Chemistry offers interdisciplinary graduate programs leading to the degree of M.A.I.S. (Master of Arts in Interdisciplinary Studies). Information about these programs may be obtained from the Interdisciplinary Studies section of this catalog and from the Department of Chemistry. A program leading to the M.S. in chemistry has been authorized and will begin in the fall of 1988. Information about the M.S. program may be obtained from the Department of Chemistry.
Classical Studies

Faculty
Bergoffen (Philosophy and Religious Studies), Burns (Philosophy and Religious Studies), Chamberlain (Foreign Languages and Literatures), Lytton (History) (Acting Chair), Magee (Foreign Languages and Literatures), Mattusch (Art), Rutledge (English)

Lecturer: Davis (Foreign Languages and Literatures)

B.A. Degree Requirements with a Major in Classical Studies

Classical Studies. Candidates must present a minimum of 120 semester hours of course work for graduation, including satisfaction of the following requirements:

1. Classical studies major requirements. 36 semester hours of course work, with at least 24 hours at the upper-division level (numbered 300 or above). Requirements for a degree in classical studies include:

   (a) 21 hours in Latin beyond LATN 102;
   (b) 6 hours in classical history;
   (c) 9 hours in classical art, literature, philosophy, European studies, or religious studies.

See Professor Randolph H. Lytton, Department of History, for the list of approved courses.

2. Bachelor of arts degree requirements. Some classical studies requirements can be used to satisfy B.A. degree requirements.

3. University graduation requirements. See Baccalaureate Degree Requirements section of the catalog for academic requirements, including the 45 semester hours of upper-division course work graduation requirement.

Sample Schedule for B.A. in Classical Studies

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101</td>
<td>Classical Literature</td>
</tr>
<tr>
<td>Social Science B</td>
<td>Social Science B</td>
</tr>
<tr>
<td>Latin 101</td>
<td>Latin 102</td>
</tr>
<tr>
<td>Math or Logic</td>
<td>Oral Communication</td>
</tr>
<tr>
<td>Non-Western Culture</td>
<td>Non-Western Culture</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical Literature*</td>
</tr>
<tr>
<td>Natural Science</td>
</tr>
<tr>
<td>Latin 201</td>
</tr>
<tr>
<td>Classical History*</td>
</tr>
<tr>
<td>Modern Foreign Language</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin*</td>
</tr>
<tr>
<td>Classical Art History*</td>
</tr>
<tr>
<td>Classical Studies</td>
</tr>
<tr>
<td>Elective*</td>
</tr>
<tr>
<td>Modern Foreign Language Elective</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*45-hour upper-division course work graduation requirement.
Communication

Faculty

Professors: Boileau (Chair), Manchester, Taylor

Associate Professors: Broome, Decker, Friedley

Assistant Professors: Akwule, Lont

Lecturers: Bartelt, Joffe, Lieb-Brihart, Rainey, Ryan, Schaefer, Starosta

Course Work

This department offers all course work designated COMM in the Course Descriptions of this catalog.

Degree Requirements

B.A. Degree with a Major in Speech Communication. Study in communication prepares students for graduate study or entry-level positions in one of three areas of concentration:
1. Public communication
2. Interpersonal communication
3. Mass communication, including journalism

In addition to the general requirements for the bachelor of arts, speech communication majors must complete 36 semester hours in communication. Required courses are as follows:
COMM 300 Foundations of Public Communication (3 semester hours)
COMM 301 Foundations of Interpersonal Communication (3)
COMM 302 Foundations of Mass Communication (3)
COMM 400 Introduction to Research in Communication (to be taken in fall of junior year) (3)
COMM 420 Senior Seminar in Theories of Communicative Interaction (to be taken in last semester of senior year) (3)

To graduate, students must earn satisfactory grades (C or better) in each of these five required courses.

The remaining 21 hours of communication electives, 12 of which must be at the 300 or 400 level, should be selected in consultation with an adviser. These 21 hours of COMM electives may include no more than 10 hours total from among the following courses: COMM 140, 141, 142, 143, 145, 146, 148, 340, 341, 342, 343, 345, 346, 348, 349, 357, 450, 451.

No more than 6 hours internship credit (COMM 450) may be applied toward COMM electives; not more than 9 hours credit in COMM 450 may be applied toward the 120 hours required for graduation.

Acceptance into major status in communication is competitive. To apply, students must have successfully completed 30 hours toward the CAS general education requirements for the B.A. degree, including COMM 101, 110, 120 or 130; have completed one of the core courses (COMM 300, 301, or 302); and have achieved appropriately high grades. For details of the acceptance process, see the requirements list available in the Communication Department office.

Not more than 9 hours upper-level communication courses taken prior to acceptance into the major may be counted toward the total 36 hours required communication courses. This restriction applies to all students accepted into the major in fall 1985 and subsequent semesters.

Students interested in majoring in communication should declare themselves as PRE-COMM majors and consult the Communication Department for details of the acceptance process.

To fulfill CAS general education communication requirements, COMM majors must take COMM 101, 110, 120, or 130. COMM majors are urged to choose the following specific courses in fulfilling College of Arts and Sciences general education requirements:

Written and Oral Communication (21 semester hours)
Includes ENGL 101, 302, 12 hours of a foreign language,* and COMM 101, or 110, or 120, or 130.
("Advanced placement is possible. Consult Department of Foreign Languages and Literatures for test information.

Analytical Reasoning (3)
Logic or Mathematics; STAT 250 recommended.

Humanities (12)
6 hours literature at the 200 level or above; 3 hours art, dance, music, or theatre; 3 hours philosophy or religion: philosophy recommended.

Social Science (12)
6 hours from economics, geography, government, or history; ECON 103 and 104 recommended; 6 hours from anthropology, psychology, and sociology; ANTH 114 and PSYC 100 recommended.

Natural Science (8)
A two-semester lab sequence in astronomy, biology, chemistry, geology, or physics.

Non-Western Culture (6)
6 credits chosen from the list found in CAS degree requirements in GMU catalog; ANTH 114 and HIST 328, 329, 354, or 356 recommended. Additional elective courses in English, government, and history are strongly recommended.

The general education requirements for COMM majors, except foreign language and COMM 101, 110, 120, or 130, may be satisfied by successful completion of the Plan for Alternative General Education (PAGE). See PAGE category in this catalog; sample schedules are available in the PAGE office.

COMM majors are urged to consult with an adviser in planning an appropriate schedule that will contribute to developing a strong cognate field or double major.
Economics

Faculty

University Professors: Buchanan

Professors: Bennett, Bloch, Coehlo, Crain, Phillips, Rowley, Snively (Emeritus), Tollison, Vaughn (Chair), Williams

Associate Professors: Chung, Lavoie, Reid, Shughart, Vanberg, West

Assistant Professors: Alexeev, Boudreaux, Grier, High, Levy, Roback, Selgin

Adjunct Faculty: Albertelli, Bender, Buechner, Clouse, Cook, Dolan, Elsworth, Gaske, Hoffman, Johnson, Lutton, Mayberry, McNaught, Muller, Rachlis, Smith

Course Work

This department offers all course work designated ECON in the Course Descriptions section of this catalog.

Degree Requirements

B.A. Degree with a Major in Economics. Students majoring in economics must satisfy general requirements set for the B.A. degree at the University. In addition, 33 hours must be in economics, to include ECON 103, 104, 306 and 311. In addition, the following courses are required: DESC 200, DESC 202 and MATH 108.

B.S. Degree with a Major in Economics. In addition to general requirements for a B.S. degree listed in the catalog, the B.S. with a major in economics requires 39 hours in economics, to include ECON 103, 104, 306, 311 and 345. In addition to 39 hours in economics, students must complete ACCT 201; DESC 200 and DESC 202; MATH 113, 114, and CS 103 or IRM 201; and a two-semester sequence in a laboratory science.

Students who contemplate graduate study in economics are advised to complete at least one course in calculus beyond MATH 114.

Secondary Teacher Certification. Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

PAGE Students: The general education requirements (with the exception of foreign language) for the B.A. and B.S. degrees are satisfied by successful comple-

Sample Schedule for B.S. with Major in Economics

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>MATH 113</td>
<td>4</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 306</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>DESC 200</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON Electives</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>DESC 200</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON Electives</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Sample Schedule for B.A. with Major in Economics

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td>MATH 108</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 306</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Naturel Science</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>DESC 200</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON Electives</td>
<td>6</td>
</tr>
<tr>
<td>ANTH, PSYC, or</td>
<td>3</td>
</tr>
<tr>
<td>SOCI</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Non-Western</td>
<td>3</td>
</tr>
<tr>
<td>Culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON Electives</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>
English

Faculty

**Professors:** Baxter, L. Brown, S. Brown, Comito, D'Andrea (Robinson Professor), Garson, Gras, Kelley, Shreve, Williams

**Associate Professors:** Bausch, Bergmann, Brunette, Cheuse, Foreman, Foster, Gallehr, Goodwin, Grossberg, Hammond, Hodges, Irvine, Jann, Kaplan, Karlson, Keaney, Klappert, Kuebrich, Lathbury, Melosh, Nadeau, O'Connor, Owens, Palmeri, Radner, Rutledge, Story, Sypher, Thaiss, Tsukui, Yocom

**Assistant Professors:** Albanese, Derrick, Grewal, Holisky, Jones, Nelson


Course Work

This department offers all course work designated ENGL in the Course Descriptions section of this catalog.

Degree Requirements

**B.A. Degree with a Major in English.** The English Department offers two major programs: the Literature Program and the Writing Program.

**The Literature Program.** In addition to general requirements for a B.A. degree, students who wish to receive the traditional B.A. in English literature must complete 30 hours of English course work beyond the 200 level with the following distribution:

1. ENGL 325, Dimensions of Literature (may be taken concurrently with the second semester of sophomore literature)
2. Twelve semester hours of English courses at the 400 level
3. One major authors course (ENGL 471, 472, 473, 474, 477, 478)
4. Three semester hours in language/style/criticism (ENGL 481, 485, 592, 397, 398, 489, 511, 551, 556, and 557)
5. Nine semester hours in upper-level English courses of the student's choice.

**The Writing Program.** For students who wish to prepare for a career in fictive or nonfictive writing, the English Department offers a major program with special emphasis in writing. In addition to general requirements for a B.A. degree, students who wish to pursue this program must complete 30 hours of course work beyond sophomore English with the following distribution:

1. At least 12 credits in the following courses: ENGL 309, 397, 398, 410, 458, 464, 489, 503, 504
2. Twelve hours of literature courses including ENGL 325, Dimensions of Literature
3. Six credit hours in upper-level English courses of the student's choice

In choosing the additional hours in English required for the literature or writing programs, each student, working with an adviser, should make a judicious selection of courses that foster a broad liberal education and prepare the student for graduate education or employment.

**English in a Double Major.** For students who wish a double major, the English Department accepts certain interdisciplinary courses for credit toward the English major. Students wishing to design their own double majors are encouraged to discuss their plans with their English advisers and the chair of the Department of English.

The English Department offers a double English-philosophy major in cooperation with the Department of Philosophy and Religious Studies. See Philosophy and Religious Studies section of this catalog for a description of the course of study. Contact the English Department for details.

**The Comparative Literature Option.** The English Department, along with the Department of Foreign Languages and Literatures, offers a B.A. in English or a modern language with a concentration in Comparative Literature. The requirements are:

1. CL 300, introduction to Comparative Literature (3)
2. ENGL 494, Special Topics in Criticism (3)
3. Twelve semester hours in the literature of a modern language
4. Twelve semester hours in the literature of a second modern language (Of the 24 hours in the two units, 12 hours must comprise a core in genre, period, or movement designed by the student and his or her adviser.)
5. CL 500, Theories of Comparative Literature (3)

For further information, contact the English Department or the Department of Foreign Languages and Literatures.

http://catalog.gmu.edu
Graduation with Distinction and with Recognition.
Candidates for graduation with Recognition in English must fulfill University requirements for graduation with Distinction and successfully complete the English Department's Honors Program. The principal component of the program is a series of Special Studies seminars ordinarily to be taken in sequence during the junior and senior years. In addition to these seminars, candidates must fulfill the writing requirement for recognition in one of two ways:

1. By submitting the term papers from three Special Studies seminars to the English Honors Committee for evaluation. If these are each judged to be "of distinguished quality," the Committee will recommend for graduation with recognition.

2. By completing (possibly in substitution for one of the four Special Studies seminars) an Honors Thesis, for which they would receive three units of independent study credit, judged to be "of distinguished quality." Although the Special Studies seminars are open to all English majors, admission is by permission of the department. Inquire at the English Department for application procedure.

Undergraduates in Graduate English Courses. The English Department permits qualified undergraduates to enroll in its graduate courses numbered 500-599 either for undergraduate or for reserved graduate credit. The same quality of work is expected from undergraduates as from graduate students.

Related Courses. For Children's Literature (EDUC 305) see the Course Descriptions section of this catalog. This course does not count for credit in English.

For Classicism and Romanticism (EUST 350) and The Twentieth Century in Europe (EUST 450) see European Studies Courses in the Course Descriptions section of this catalog. Three credits of EUST 350 or EUST 450 may be counted toward the English major.

Secondary Teacher Certification. Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

PAGE Students. The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in English.

Sample Schedule for Undergraduate English Majors

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>ENGL 251 (or 203 or 205)</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science</td>
</tr>
<tr>
<td>Economics,</td>
<td>Economics,</td>
</tr>
<tr>
<td>government,</td>
<td>government,</td>
</tr>
<tr>
<td>geography, or</td>
<td>geography,</td>
</tr>
<tr>
<td>history</td>
<td>history</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 252 (or 204 or 206)</td>
<td>Advanced English course</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>Logic or mathematics</td>
<td>Non-Western culture (300 + level)</td>
</tr>
<tr>
<td>Non-Western culture, e.g., ANTH 114</td>
<td>Philosophy or religion</td>
</tr>
<tr>
<td>Oral Communication or ENGL 325</td>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 302</td>
<td>Advanced English courses</td>
</tr>
<tr>
<td>Advanced English courses</td>
<td>Psychology or sociology</td>
</tr>
<tr>
<td>Psychology or sociology</td>
<td>Art, dance, film, or theatre</td>
</tr>
<tr>
<td>English (300 + level)</td>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced English courses</td>
<td>Advanced English courses</td>
</tr>
<tr>
<td>Electives (300 + level)</td>
<td>Electives (300 + level)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Foreign Languages and Literatures

Faculty

Professors: Francescato (Chair), Aguera, Elstun, Hecht, Lewis, Marquez (Robinson Professor), Willis

Associate Professors: Cordero, Goldin, Hazera, LePage, Levine, Meyer, Wagner

Assistant Professors: Berroa, Buflif, Chamberlain, Magee, Ricouart, Wekerle

Visiting Acting Assistant Professor: Cabrera

Lecturers: Carboni-Vetter, Davis, Forowa, Hoi, Seidman

Course Work

This department offers all course work designated ARAB, CHIN, CL, CLAS, FREN, FRLN, GERM, GREE, HEBR, ITAL, JAPA, KORE, LATN, PORT, RUSS, SPAN, and VIET in the Course Descriptions section of this catalog.

General Aims and Guidelines. Courses in the Department of Foreign Languages and Literatures are designed to meet the needs of several categories of students. Majors are provided in French, German, and Spanish for those who wish to build a liberal education around the intensive study of a foreign language, literature, and culture as well as for those who plan to undertake graduate study in these fields or to become language teachers, professional translators, interpreters, or foreign correspondents. The department also cooperates in the offering of the major in Area Studies.

Elective courses are provided on several levels for those who wish to acquaint themselves with the language, culture, literature, and worlds of thought outside their own environment; for those majoring in disciplines that require the knowledge of one or more foreign languages; and for those who recognize that the knowledge of a foreign language or literature combined with other professional interests in business and industry will enhance employment opportunities and advancement.

The following courses are offered in English; the knowledge of a foreign language is not required: CLAS 250, 300; FREN 325, 329; FRLN 431; GERM 301, 302, 305, 325; JAPA 301, 302; KORE 450, 451; RUSS 300, 353, 354; SPAN 321, 322, 325, 329; VIET 301, 302. (Courses numbered 325 with a variable content may be repeated once for credit.)

Elementary and intermediate courses are offered in Arabic, Chinese, French, German, Greek, Italian, Japanese, Latin, Portuguese, Russian, and Spanish, which may be used to fulfill the College's foreign language area requirement for the B.A. degree. These courses are also designed to broaden the student's general educational background and strengthen an awareness of the intrinsic value of language and linguistic heritage. The language laboratory complements the oral and written work of the classroom with tapes, drills, exercises, and cultural materials.

Courses that Fulfill General Requirements:

1. Language courses through the intermediate level fulfill the foreign language requirement.

2. All literature courses on the 200 level and above fulfill the general requirement in literature for baccalaureate degrees.

3. The following courses fulfill the non-Western culture requirement: FREN 451; KORE 450, 451; RUSS 353, 354; VIET 301, 302.

Secondary Teacher Certification

Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

The Comparative Literature Option. The Foreign Language department, along with the Department of English, offers a B.A. in Foreign Language with a concentration in Comparative Literature. The requirements are:

1. CL 300, Introduction to Comparative Literature (3).

2. ENGL 494, Special Topics in Criticism (3).

3. Twelve semester hours in the literature of a modern language.

4. Twelve semester hours in the literature of a second modern language. (Of the 24 hours in the two units, 12 hours must comprise a core in genre, period, or movement designed by the student and his or her adviser.)

5. CL 500, Theories of Comparative Literature (3).

For further information contact the Department of Foreign Languages and Literatures or the English Department.

Degree Requirements

B.A. Degree with a Major in French. In addition to meeting the general degree requirements for the B.A. degree as established by the College of Arts and Sciences, students must complete a minimum of 27 semester hours of work in French courses at the 300 level and above. Students are expected to complete a
balanced program that includes courses in language, culture and civilization, and literature. The 27 hours required in the major must include the following:

1. One advanced language course (FREN 350, 351, 352, 355, 356, 460, 461, or 462)
2. One course in French civilization (FREN 375 or 376)
3. One survey course in French literature (FREN 377 or 378)
4. Four courses at the 400 level or above.

No more than one course (3 credit hours) conducted in English may be taken for major credit in French.

Students are encouraged to take courses in other languages and literatures, and in related disciplines such as music, art, history, and philosophy. Those wishing to complete a double major in French and another subject are urged to work in consultation with advisers in both disciplines.

B.A. degree with a Major in German. The major in German prepares students for teaching careers on the secondary school level, for graduate study in Germanic languages and literature, and for research and professional work in government and private enterprise.

In addition to meeting the general degree requirements for the Bachelor of Arts degree as established by the College of Arts and Sciences, students must complete 27 hours of work in German courses at the 300 level or above. No more than six hours of courses taught in English may be applied to the major; in addition to certain courses listed in the Course Descriptions under GERM, these may include EUST 350 and 450.

Students are expected to complete a balanced program that includes courses in language, culture and civilization, and literature. GERM 340 and either GERM 301 or 302 are required. Students are encouraged to include related courses in ENGL, HIST, and PHIL among their electives.

Students who want a double major in German and another subject should plan a program of study in consultation with advisers from both disciplines.

B.A. Degree with a Major in Spanish. The degree program in Spanish prepares the major to qualify for positions in government and industry, to undertake graduate study in Spanish, or to teach on the secondary level.

In addition to meeting the general degree requirements for the B.A. degree as established by the College of Arts and Sciences, students must complete 27 hours of work in Spanish courses at the 300 level or above for the Spanish major. Students are expected to complete a balanced program that includes courses in language, culture and civilization, and literature. The 27 hours required in the major must include the following:

1. One course in Hispanic civilization (SPAN 361 or 366)
2. Two advanced language courses — one at the 300 level and one at the 400 level (SPAN 301, 351, 352, 353, 359, 451, 452)
3. Three literature courses (SPAN 311, 317, 318)
   Students contemplating the possibility of pursuing graduate studies in Hispanic literatures are encouraged to take at least two 400-level courses in literature.
4. No more than one course (3 credit hours) conducted in English may be taken for major credit in Spanish.
Geology

Faculty

Professors: Mose (Chair), Baskerville
Associate Professor: Diecchio
Assistant Professors: Kline, Zielinski
Adjunct Professors: Gurfein, Luce, Malinky, Perry, Zietz

Degree Requirements

B.S. Degree with a Major in Geology. In addition to the general requirements for this degree established by the College of Arts and Sciences, candidates are required to submit at least 40 semester hours of geology, no more than 12 semester hours of which may be at the 100 level. Required geology courses are GEOL 101, 102, 108, 201, 202, 204, 207, 301, 303, 304, and 410, plus 7 credits at the 300 and 400 level.

Also required are one year of calculus (MATH 113-114), one year of chemistry (CHEM 211-212), one year of physics (PHYS 343-345 or 250-350), and GEOL 316 or a computer science course. Geology majors are strongly encouraged to take a six-week summer field-camp course approved by the field-camp adviser. Geology majors unable to attend a field camp are encouraged to take GEOL 407. GEOL 407, in addition to GEOL 108 and 303, will constitute six credit hours of field mapping experience that may be considered equivalent to a field-camp course. One year of biology, one year of computer science, and two years of French, German, or Russian are strongly recommended for geology majors who contemplate graduate study in geology.

Students must receive a C average or better in GEOL 101-102 in order to enroll in 200-400-level geology courses. Students with a B average or better in PAGE 227-228 can substitute the PAGE 227-228 course for GEOL 101-102. At least 45 hours of credit in all courses numbered 300 or above are required for a B.S. in geology. Students who have been continuously enrolled since their admission to the University have the option of graduating under the provisions of any catalog subsequent to their admission.

Persons with a B.S. degree in geology are eligible to obtain a Provisional Certificate (good for two years) to teach Earth Science in Virginia secondary schools if the courses used to satisfy the geology degree requirements include the following: Astronomy (ASTR 103 or 105); chemistry (CHEM 211); biology (BIOL 113 or 151); mathematics (MATH 113); meteorology (GEOL 206 OR 309); oceanography (GEOL 309), and physics (PHYS 250 or 341). Additional information on the requirements for a Collegiate Professional Certificate to teach Earth Science (good for five years, renewable) may be obtained from the Geology chair.

Minimum course requirements are as follows:

Geology (40)
English 101, 302
(6) Literature at 200-400 level
(6) Chemistry 211-212
(8) Math 113-114
(8) Physics 343-345 or 250,350
(8) Electives outside Natural Science and Math
(6) Special Electives (6)

In addition to the above requirements, all candidates are encouraged to take a six-week summer field camp approved by the field camp advisor.

Certificate Programs in Geology. The Department of Geology offers three certificate programs: (1) Certificate in Earth Science Teaching — requires a year of geology and a year of chemistry, plus a semester of astronomy, biology, meteorology, oceanography, calculus, physics, and a science education course; (2) Certificate in Geoscience Programming —

Sample Schedule for B.S. in Geology

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 113</td>
<td>ASTR 103</td>
</tr>
<tr>
<td>CS 103</td>
<td>CS 161</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Electives</td>
</tr>
<tr>
<td>GEOL 101</td>
<td>GEOL 102</td>
</tr>
<tr>
<td></td>
<td>GEOL 108</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 211</td>
<td>CHEM 212</td>
</tr>
<tr>
<td>GEOL 201</td>
<td>GEOL 202</td>
</tr>
<tr>
<td>MATH 113</td>
<td>GEOL 207</td>
</tr>
<tr>
<td>STAT 250</td>
<td>MATH 114</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 309</td>
<td>ENGL 302</td>
</tr>
<tr>
<td>GEOG 310</td>
<td>GEOL 303</td>
</tr>
<tr>
<td>GEOL 204</td>
<td>GEOL 311</td>
</tr>
<tr>
<td>GEOL 301</td>
<td>Literature</td>
</tr>
<tr>
<td>PHYS 343</td>
<td>PHYS 345</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 262</td>
<td>EDCI 573</td>
</tr>
<tr>
<td>GEOL 304</td>
<td>Electives</td>
</tr>
<tr>
<td>GEOL 309</td>
<td>GEOG 411</td>
</tr>
<tr>
<td>GEOL 316</td>
<td></td>
</tr>
<tr>
<td>GEOL 410</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Certificate Programs in Geology. The Department of Geology offers three certificate programs: (1) Certificate in Earth Science Teaching — requires a year of geology and a year of chemistry, plus a semester of astronomy, biology, meteorology, oceanography, calculus, physics, and a science education course; (2) Certificate in Geoscience Programming —
requires courses in mathematics and statistics, and courses in the application of computer science to geology and cartography; (3) Certificate in Geochemistry — requires 12 hours of chemistry and 12 hours of geology. Additional information about these certificates can be obtained from the chair of the Department of Geology and from the Certificates and University Courses section of this catalog.

Graduate Degree Program in Geology (MAIS). The Department of Geology offers courses leading to a Master of Interdisciplinary Science (MAIS) degree. The MAIS degree requirements include a total of 36 semester credits, at least 6 of which are in graduate-level geology, and 6 in thesis research. Of the remaining credits at least 6 must be in related course work in areas outside geology, and approved by the program adviser. Students design a course of study that combines geology with other areas related to geology. Students interested in the MAIS degree in organic geochemistry are particularly encouraged to apply. Additional information can be obtained from the Division of Continuing Education (703-323-2342).

PAGE Students. The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Plan for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office in Thompson Hall, Room 222, for sample schedule for majors in geology.

History

Faculty

Professors: Bakhash (Robinson Professor), Cassara, Diner, Pacheco, Spence, Wade

Associate Professors: J. R. Censer, Deshmukh (chair), Gleissner, Harsh, Henriques, Holsinger, Jensen, Lytton, Rosenzweig, Saeed, Soder, Walker

Visiting Commonwealth Professor: Hall

Assistant Professors: Cohen, Duara, Hawkes, Stewart

Lecturers: Ambacher, Angel, Bailey, Butowsky, J. T. Censer, Foard, Hood, Jessup, Kriesser, Orens, Ramirez, Shaw, Swann, Sneerson, Spector

Course Work

This department offers all course work designated HIST and LAC in the Course Descriptions of this catalog.

Degree Requirements

B.A. Degree with a Major in History. Candidates for a B.A. degree in history must meet the following requirements:

1. History major requirements. 36 semester hours of history, with at least 21 hours of the total presented for the degree in the 300 and 400 series. No more than 42 hours may be counted toward completion of the program, but hours of history in excess of that number may be presented as elective hours to be counted toward graduation. Three hours of the history major requirement may be satisfied by either LAS 491, AMST 310, 320, 330, 340, or EUST 300 or 400. Requirements for a degree in history include:

(a) U.S. history: 6 semester hours

(b) European history (including Russia): 6 semester hours

(c) Global, Latin American, African, Asian, or Middle Eastern history: 6 semester hours

(d) HIST 300: 3 semester hours

(e) HIST 499: 3 semester hours

(f) At least 12 hours of history electives at the 300 and/or 400 levels to complete the 21-hour upper-
division history requirement.

Total: 36 semester hours

2. Bachelor of arts degree requirements. See Bachelor of Arts Degree Requirements section for history courses that can be used to fulfill the non-western culture requirement.

3. University graduation requirements. See Baccalaureate Degree Requirements section for academic requirements, especially the 45 hours of upper-division course work graduation requirement.

Secondary Teacher Certification. History majors and majors in disciplines other than history who wish to become secondary school teachers in history, or history and social science should consult with the secondary education adviser in the Department of History. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

Sample Schedule for B.A. in History

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST101</td>
<td>HIST102</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>English composition 101</td>
<td>Literature</td>
</tr>
<tr>
<td>Social science (Group B)</td>
<td>Social science (Group B)</td>
</tr>
<tr>
<td>Fine arts</td>
<td>Mathematics or logic</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST121</td>
<td>HIST122</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>Natural science</td>
<td>English 302</td>
</tr>
<tr>
<td>Literature</td>
<td>Natural science</td>
</tr>
<tr>
<td>Non-Western culture</td>
<td>Philosophy or religion</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST300</td>
<td>History elective</td>
</tr>
<tr>
<td>History elective</td>
<td>History elective</td>
</tr>
<tr>
<td>Oral communication</td>
<td>Non-Western culture</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Seminar in History (or history elective)</td>
<td>Senior Seminar in History (or history elective)</td>
</tr>
<tr>
<td>History elective</td>
<td>History elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Mathematical Sciences

Faculty

Professors: Levy, Saperstone (Chair), Smith (Mathematics Education)

Visiting Professor: Epstein

Associate Professors: Cabell, Fischer, Gabel, Kiley, Lawrence, Levy, Lim, Lin, Shapiro, Zoltek

Assistant Professors: Aligood, Calderer, Chen, Colonna, Kulesza, McDaniel, Morris, O'Brien, Sarkaria, Sauer, Singman, Thomas, Trenholme

Visiting Assistant Professor: Izmirli

Lecturers: Ahmadi, Donelson, Ellis, Gill, Haberkorn, Howey, Lawson, Lieberman, MacDonald, McAllister, Mohamed, Morse, Schroeder, Stallings, Weidner

Visiting Lecturer: Paddock

The degree programs in mathematics are designed to meet the needs of students with various interests and career goals from business/industry/research to graduate and professional school. Concentrations are available for students in traditional mathematics or applied mathematics. Students may complement other interests by taking a double major in mathematics and some related field of study such as economics, physics, computer science, or engineering.

Course Work

This department offers all course work designated MATH in the Course Descriptions section of this catalog.

Degree Requirements

B.A. Degree with a Major in Mathematics. In addition to general degree requirements for a B.A. degree, the following courses are required: MATH 113, 114, 125, 121, 290, 306, plus 15 additional hours numbered above 310 for a total of 37 semester hours in mathematics. Three semester hours in computer science are recommended.

Students who are not majoring in mathematics but are pursuing certification for secondary school teaching are advised to take MATH 290, 302, 303, and CS 103 or 112.

B.S. Degree with a Major in Mathematics. In addition to the general degree requirements for a B.S. degree in the College of Arts and Sciences, the student must complete all the course work in each of the four groups

http://catalog.gmu.edu
A, B, C, and D listed below:


B. Science Requirement (14-16 semester credits):
   1. A year of natural science must be chosen from one of the following four sequences:
      (a) BIOL 113, 114
      (b) CHEM 211, 212
      (c) GEOL 101, 102
      (d) PHYS 250, 350, 351

   2. A second year must be chosen from one of the following three options:
      (a) The list above
      (b) Six semester hours chosen from more advanced courses in one of the natural science fields represented in the list above. (Only courses that are acceptable for credit toward the natural science major are permitted.)
      (c) PHYS 352, 353

C. Computer Science Requirement: CS 112

D. Concentrations: The student must choose traditional mathematics or applied mathematics.

   1. Traditional mathematics concentration (18 semester credits)
      (a) MATH 316
      (b) MATH 321 or 431
      (c) 12 semester credits, 9 of which must be numbered above MATH 310

   2. Applied mathematics concentration (18 semester credits)
      (a) MATH 325, 351, 413, and 414
      (b) 6 semester credits, 3 of which must be numbered above MATH 310

The department recommends that a two-year proficiency in either French, German, or Russian be demonstrated.

MATH 213 and 304 are not recommended for mathematics majors. In special circumstances a student may substitute both MATH 303 and 304 for MATH 306. MATH 106, 108, 110, 111, 371, and 372 do not count toward satisfying the requirements for a major in mathematics.

For all students:

1. Students may not receive credit for
   (a) both MATH 213 and MATH 215
   (b) both MATH 303 and MATH 306
   (c) both MATH 304 and MATH 306

2. After receiving a grade of C or better in one of the courses listed below in the left column, students may not receive credit for the corresponding course in the right column.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3 Literature</td>
</tr>
<tr>
<td>FRLN 101</td>
<td>3 FRLN 102</td>
</tr>
<tr>
<td>MATH 113</td>
<td>4 MATH 114</td>
</tr>
<tr>
<td>Natural science</td>
<td>4 Natural science</td>
</tr>
<tr>
<td></td>
<td>MATH 125</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 215</td>
<td>4 MATH 306</td>
</tr>
<tr>
<td>MATH 290</td>
<td>3 Electives</td>
</tr>
<tr>
<td>FRLN 201</td>
<td>3 FRLN 202</td>
</tr>
<tr>
<td>CS 112</td>
<td>4 Literature</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH (above 310)</td>
<td>3 MATH (above 310)</td>
</tr>
<tr>
<td>Electives</td>
<td>9 Electives</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH (above 310)</td>
<td>6 MATH (above 310)</td>
</tr>
<tr>
<td>Electives</td>
<td>9 Electives</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Sample Schedule for B.A. in Mathematics

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3 Literature</td>
</tr>
<tr>
<td>FRLN 101</td>
<td>3 FRLN 102</td>
</tr>
<tr>
<td>MATH 113</td>
<td>4 MATH 114</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4 Natural science</td>
</tr>
<tr>
<td></td>
<td>MATH 125</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 215</td>
<td>4 MATH 306</td>
</tr>
<tr>
<td>MATH 290</td>
<td>3 Electives</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4 Natural science</td>
</tr>
<tr>
<td>CS 112</td>
<td>4 CS 212</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Sample Schedule for B.S. in Mathematics

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>3 Literature</td>
</tr>
<tr>
<td>FRLN 101</td>
<td>3 FRLN 102</td>
</tr>
<tr>
<td>MATH 113</td>
<td>4 MATH 114</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4 Natural science</td>
</tr>
<tr>
<td></td>
<td>MATH 125</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 215</td>
<td>4 MATH 306</td>
</tr>
<tr>
<td>MATH 290</td>
<td>3 Electives</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4 Natural science</td>
</tr>
<tr>
<td>CS 112</td>
<td>4 CS 212</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
The above sample schedules are meant for illustrative purposes only and should be used with the following in mind:

1. Electives are not totally free. They should be chosen to satisfy distribution requirements and the requirement of 45 upper-division semester credits.

2. Not all of the courses listed above are required; some are just suggested.

3. A student who chooses to take physics as a natural science will not start the physics sequence until the second semester. Computer Science 112 would be an appropriate replacement in the first semester.

4. A B.S. student may choose to take more or less foreign language than listed.

5. Students with other responsibilities should consider taking less than the number of courses suggested.

---

**PAGE (Plan for Alternative General Education)**

**Faculty**


The following PAGE faculty serve as course leaders of multidisciplinary courses listed in the Course Descriptions section of this catalog.

Fred Siff, PAGE 120; Eileen Sypher, PAGE 122; Margaret Yocom, PAGE 123; Stanley Zoltek, PAGE 125/225; Robert Karlson, PAGE 130; Eleanor Gerber, PAGE 131; Emmett Holman, PAGE 150/151; Doug Mose, PAGE 227; Chris Jones, PAGE 228; Robert Clark, PAGE 230; Vickie Rader, PAGE 250/251; Brack Brown, PAGE 252; Vickie Rader, PAGE 253; Marie Nelson, Writing Across the Curriculum.

**Course Work**

The PAGE faculty offers all course work designated PAGE in the Course Descriptions section of this catalog.

**PAGE Program**

The George Mason Plan for Alternative General Education is an integrated, sequential, general education program, introducing students to a wide range of concepts and subject matter in the humanities, social sciences, sciences, and mathematics, as well as developing and increasing skill in writing and speaking and in use of the computer. The PAGE program fulfills general education and graduation requirements for a bachelor's degree at George Mason University, with the exception of the foreign language requirement in the College of Arts and Sciences.

Students in PAGE will not only explore a range of diverse academic fields, such as computer science, history, mathematics, physics, biology, arts, literature,
sociology, and political science, but will also learn how these disciplines influence and interact with each other. The program emphasizes both breadth of knowledge and the acquisition of skills and provides opportunities for students to integrate and apply both knowledge and skills to prepare themselves for living and working in contemporary society. Augmenting the interdisciplinary thrust of the various courses in PAGE will be two weekly lecture series (one credit each) by PAGE faculty and guest lecturers during each of the first three semesters.

**Academic Policies and Procedures Unique to PAGE**

Students in PAGE are subject to University policy on admissions, transfers, and failure as stated in this catalog. In addition, students in PAGE (a special curriculum within this University structure) are subject to certain academic policies and procedures that are unique to this sequential program:

**Admission:** Admission to the PAGE program is open to all full-time entering freshmen on a space available basis.

**Majors:** Not a major in itself, PAGE fulfills general education requirements for every major a student may choose, except for the foreign language requirement in the College of Arts and Sciences. Specific requirements of the departments in regard to their majors are available in the PAGE office and in the department offices.

**Transfers:** Within GMU — Because of the sequential and integrated nature of the program, PAGE courses do not correspond exactly to the general education courses in the traditional programs. A list of equivalencies is available in the College of Arts and Sciences section of this catalog, in the PAGE office, and in the offices of the deans.

Outside GMU — The PAGE program meets the general education requirements at other universities. Students transferring after one year or less, however, may have to take additional courses.

**Failures**

1. George Mason University has policies on unsatisfactory work (grades of D or F) and on incompletes that apply to all students in the University. (Refer to the Grading Policies section of this catalog.)

2. Supplementary policies on failures for students in PAGE:

   (a) PAGE students failing (grade of F) a total of five or more hours of course work in PAGE in the first semester of the freshman year will be dropped from the program.
   (b) PAGE students failing (grade of F) 2 to 4 hours of course work in PAGE in a given semester will be placed on “Notice.”
   (c) If a student is placed on “Notice” in the first semester of the freshman year and then receives failing grades in five or more hours of the second semester, that student will be dropped from the program.
   (d) If a student is placed on “Notice” in both semesters of the freshman year and then receives failing grades in five or more hours in PAGE in the first semester of the sophomore year, that student will be dropped from the program.
   (e) Failing grades occurring in the second semester of the sophomore year will not lead to immediate dismissal from the program; however, students must realize that failing grades received at this time will most likely mean a delay of at least two semesters before they can complete the PAGE program.
   (f) Except with permission of the director, students must retake, in the next semester in which these courses are offered, the PAGE course(s) they have failed. In exceptional cases, the PAGE office may allow a student to substitute a similar course, offered elsewhere in the University, for the PAGE course a student has failed.
   (g) Reinstatement of those dropped from PAGE: Students may appeal to the director the policies stated above. Academic counseling will be provided for all students failing courses in PAGE.
   (h) University Rules for Good Academic Standing: Like all other students in the University, PAGE students are bound by University policies governing “good academic standing.” Please become familiar with these policies as they are stated in this catalog.

3. General education requirements for students failing in PAGE:

Students dropped from the Page program for reasons of failure will have to meet the traditional general education requirements of the University. A list of equivalencies between PAGE courses and courses in the traditional general education program is available in the PAGE office and in the offices of the deans. Special requirements of the departments in regard to their majors are available in the PAGE office and in the department offices.
Performing Arts

Faculty

Professors: Burton, D’Andrea (Robinson Professor), di Bonaventura, Gabriel (Chair), Maiello, J. Smith

Associate Professors: Brawley, Cooke, Hill, Kanyan, Latimer, Miller, Murphey, G. Smith

Assistant Professors: Campbell, Harrison, Houser

Lecturers: Brophy, Denker, Jankowski, Kamp, Leshin, Soli, Tamalonis, Vaughan, Wisnosky

Applied Music Faculty

Accompanying. Beverly Soll, Adjunct Assistant Professor. B.M., M.M., University of Illinois; D.M.A., University of Maryland; coach and accompanist.

Bassoon. Truman Harris, Adjunct Associate Professor. B.A., North Texas State University; M.M., The Catholic University of America; bassoonist, National Symphony Orchestra.

Cello. Yvonne Caruthers, Adjunct Assistant Professor. B.M., Eastman School; cellist, National Symphony Orchestra.


Sam di Bonaventura (see listing under Violin).

Glenn Smith, Associate Professor. B.A., M.A., California State University, Hayward; D. Mus., Indiana University.

Conducting. Stephen Burton (see listing under Composition).


Judith Harrison (see listing under Piano).

Thomas Hill, Associate Professor. B.M., M.M., Boston University; D.M.A., The Catholic University of America.

Joseph Kanyan (see listing under Clarinet).

Anthony Maiello, Professor. B.S., M.S., Ithaca College; former Director of Bands, Potsdam College of the State University of New York.

James G. Smith, Professor. B.M., M.M., Peabody Conservatory; D.M.A., University of Illinois, Urbana-Champaign; former conductor, University of Illinois Chamber Choir; former director, Choral Activities, Eastman School.


Flute. Thomas Perazzoli, Adjunct Associate Professor. Philadelphia Musical Academy; flutist, National Symphony Orchestra.

Guitar (Classic). Jeffrey Meyerriecks, Adjunct Associate Professor. B.M., North Carolina School of the Arts; concert tours in the United States, Europe, South America, and Caribbean; former guitarist, U.S. Navy Band of Washington, DC.

Larry Snitzler, Adjunct Associate Professor. Studied with Andres Segovia and Nadia Boulanger; international concert tours; free-lance music producer, National Public Radio.

Harp. Jeanne Chalifoux, Adjunct Assistant Professor. Artist Diploma, Curtis Institute of Music; former harpist, National Gallery Orchestra and National Symphony Orchestra.

Harpischord. Webb Wiggins, Adjunct Assistant Professor. B.M., Stetson University; M.M., Eastman School; harpsichordist, Smithsonian Chamber Orchestra and Smithsonian Chamber Players.

Horn. Edwin Thayer, Adjunct Associate Professor. B.M., M.M., University of Illinois, principal hornist, National Symphony Orchestra.

David Whaley, Adjunct Associate Professor. B.M.E., Drake University; M.M., D.M.A., University of Illinois; hornist, National Symphony Orchestra.

Oboe. Gene Montooth, Adjunct Associate Professor. B.M.E., Indiana University; principal oboist, Kennedy Center Opera House Orchestra, Filene Center (Wolf Trap) Orchestra, and National Gallery Orchestra.

Organ. Charles Whittaker, Adjunct Associate Professor. B.M., Westminster Choir College; organist, Fairfax United Methodist Church.

Percussion. Kenneth Harbison, Adjunct Assistant Professor. B.M., Eastman School; M.M., The Catholic University of America; percussionist, National Symphony Orchestra.

Piano. Thomas Brawley, Associate Professor. B.M., Greensboro College; M.M., Ph.D., Northwestern University.

Joanne Haroutounian, Adjunct Assistant Professor. B.A., Trenton State College; M.A., The American University.

Judith Harrison, Assistant Professor. B.M.E. Florida State University; M.A., University of North Carolina, Chapel Hill; Ed.D., University of North Carolina,
Greensboro.

Marjorie Lee, Adjunct Associate Professor. B.S., Old Dominion University; M.M., Western Michigan University; D.M.A., University of Maryland; U.S. Artistic Ambassador (1985-86) and international piano competition winner.

Elvin Schmitt, Adjunct Professor. Columbia University; Tobias Matthay PianoForte School, London; Ecole Normale, Paris; Sorbonne, Paris; former soloist, U.S. and European orchestras; former head of piano departments, Drake and Syracuse universities.

Beverly Soll (see listing under Accompanying).

SAXOPHONE. Richard Parrell, Adjunct Assistant Professor. B.A., B.M., George Mason University; M.M.E., North Texas State University; saxophonist, U.S. Army Band of Washington, DC.

String Bass. Harold Robinson, Adjunct Associate Professor. Northwestern University; Peabody Conservatory of Music; principal string bassist, National Symphony Orchestra.

Trombone. Paul Schultz, Adjunct Assistant Professor. B.M., North Central College (Illinois); M.M., Northwestern University; D.M.A., Catholic University of America; trombonist, U.S. Army Band of Washington, DC.

Trumpet. David Flowers, Adjunct Associate Professor. B.M., M.M., University of Michigan; D.M.A., The Catholic University of America; trumpeter, National Symphony Orchestra.

Gilbert Mitchell, Adjunct Associate Professor. Ernest Williams School of Music; former principal trumpeter, New Orleans Symphony Orchestra; retired associate conductor, U.S. Army Band of Washington, DC.

Tuba. Michael Murray Bunn, Adjunct Assistant Professor. B.M., M.M., Peabody Conservatory; tubist, Kennedy Center Opera House Orchestra, Filene Center (Wolf Trap) Orchestra, and National Gallery Orchestra.

Viola. Richard Parnas, Adjunct Associate Professor. Curtis Institute of Music; principal violinist, National Symphony Orchestra.

Ramon Scavelli, Adjunct Associate Professor. Philadelphia Musical Academy; violinist, National Symphony Orchestra.

Viola Da Gamba. Kenneth Slowik, Adjunct Associate Professor. B.M., M.M., Roosevelt University; principal viola da gamba and cellist, Smithsonion String Quartet, Smithsonian Chamber Orchestra, and Smithsonian Chamber Players.

Violin. Sam di Bonaventura, Professor. B.S., Juilliard School; B.M., M.M., Yale University; M.A., Harvard University; D.M.A., Peabody Conservatory of Music.

William Haroutounian, Adjunct Associate Professor. B.M., Curtis Institute of Music; M.M., The Catholic University of America; violinist, National Symphony Orchestra.

Voice. Thomas Beveridge, Adjunct Associate Professor. A.B., Harvard University; soloist, U.S. orchestras, oratorio and choral societies, Carnegie Recital Hall, Phillips Collection, and National Gallery of Art.

Raymond Brown, Adjunct Professor. Teacher's Certificate, Peabody Conservatory; B.S., Johns Hopkins University; Professor Emeritus, The Pennsylvania State University; former soloist, oratorio and opera companies in the United States and Europe.

Rilla Mervine. Adjunct Associate Professor. A.A., North Dakota State School of Science; Certificate, Peabody Conservatory; soloist, U.S. orchestras, oratorio and choral societies, Phillips Collection, and National Gallery of Art.

Vera Tilson, Adjunct Associate Professor. Mannes College of Music; music director, Unitarian Church of Arlington; former music director and conductor, Arlington Metropolitan Chorus.

Anastios Vrenios, Adjunct Associate Professor. B.M., University of the Pacific; M.M., Indiana University; soloist, major U.S. and European orchestras and opera companies.

Koto. Kyoko Okamoto, Adjunct Assistant Professor. Bachelor in Languages, Kyoto University of Foreign Studies; Toho Kinshu Kai (Koto School).

Course Work

This department offers all course work designated DANC, MUSI, and THR in the Course Descriptions section of the catalog.

Page Students

The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by the successful completion of the Plan for Alternative General Education (PAGE) sequence of courses. For information, see section in this catalog entitled PAGE. Sample schedules are available in the PAGE Office (Thompson 222) for majors in dance, music, and theatre.

Secondary Teacher Certification. Students seeking certification to teach vocal/general or instrumental music on the elementary and secondary levels must earn the Bachelor of Music degree. For students who have earned a baccalaureate degree and who are seeking state certification to teach music, this recommendation is normally made contingent upon completion of the sequence of courses listed under Bachelor of Music — Concentration in Music Education. The courses listed under General Education and Additional Courses in the Music Education Concentration are used to fulfill National Council for the Accreditation of Teacher Education (NCATE), state certification, and University requirements.

Dance

Two degrees in dance are offered:

1. Bachelor of Fine Arts with a major in Dance

2. Bachelor of Arts with a major in Dance

The two dance degree programs prepare students for
graduate work in performance, choreography, teaching, history, and criticism, in addition to professional and creative opportunities in the dance field.

B.F.A. Degree with a Major in Dance

The bachelor of fine arts degree in dance is specifically designed for students with firm professional goals who wish to devote a significantly larger portion of their college career to a more intensive and comprehensive level of dance study. The B.F.A. degree offers a general modern dance major that allows for concentrated study in either performance, choreography, or teaching. Technical training includes ballet, jazz, and a strong emphasis on modern dance. Entrance into the B.F.A. program is by audition. Auditions occur twice a year, in July and January, and interested students must make arrangements in advance by contacting the Department of Performing Arts. Transfer students are also required to audition. Approval for the dance program does not mean that a student has been admitted to the University. For admission to the University each student must contact and submit application to the Office of Admissions.

Because of the professional nature of this degree, the program requires completion of 130 hours of course work. The B.F.A. is specifically a performance-oriented program. It is designed to prepare students professionally as performers, choreographers, and teachers, as well as to prepare them for graduate study.

B.F.A. Degree with a Major in Dance

1. General Education

   Semester Hours 32
   See requirements for B.F.A. degree under the College of Arts and Sciences section of the catalog. Dance majors must take Biology 124 and 125 to fulfill the natural science requirement.

2. Major Program Dance Core

   Dance and related courses required of all dance majors:
   Dance Appreciation 3
   Modern Dance Technique (21 hours must be intermediate and above) 25
   Dance Improvisation 3
   Dance Composition I 3
   Dance Composition II 3
   Dance History I — Primitive through 18th Century 3
   Century Dance History II — 19th and 20th Century 3
   Rhythmical Analysis 3
   Dynamic Alignment 3
   Teaching Principles of Modern Dance 3
   Dance Performance 6
   Costumes 3
   Lighting 3
   Acting I 3
   Music Appreciation 3
   Choreography 3

   3. Dance Electives: Concentrations in choreography, teaching, and performance 15

   4. Free Electives 10

   Total 130

B.F.A. Degree with a Major in Dance Sample Schedule

<table>
<thead>
<tr>
<th>Bachelor of Fine Arts—Dance Sample Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
</tr>
<tr>
<td>English Composition 3</td>
</tr>
<tr>
<td>Dance Appreciation 3</td>
</tr>
<tr>
<td>Social science 3</td>
</tr>
<tr>
<td>Acting I 3</td>
</tr>
<tr>
<td>Modern Dance Technique 2</td>
</tr>
<tr>
<td>Dance Elective 16</td>
</tr>
</tbody>
</table>

| **Second Semester**                         |
| English Literature 3                       |
| Dance Improvisation 3                      |
| Social science 3                           |
| Music Appreciation 3                       |
| Modern Dance Technique 2                   |
| Dance Elective 16                          |

| **Third Semester**                          |
| English Literature 3                       |
| Modern Dance Technique 3                   |
| Dance Composition I 3                      |
| Human Anatomy 4                            |
| Costumes 3                                |

| **Fourth Semester**                         |
| English Composition 3                      |
| Modern Dance Technique 3                   |
| Dance Composition II 3                     |
| Physiology 4                               |
| Rhythmical Analysis 3                      |

| **Fifth Semester**                          |
| Modern Dance Technique 3                   |
| Dance History I 3                          |
| Dynamic Alignment 3                        |
| Dance Performance 3                        |
| General Education Elective 3               |
| Dance Electives 17                         |

| **Sixth Semester**                          |
| Modern Dance Technique 3                   |
| Dance History II 3                         |
| Teaching Principles 3                      |
| General Education Elective 3               |
| Lighting 3                                |
| Dance Electives 17                         |

| **Seventh Semester**                        |
| Modern Dance Technique 3                   |
| Performance 3                             |

| **Eighth Semester**                         |
| Modern Dance Technique 3                   |
| Dance Electives 6                          |
| Management 3                              |
| Free Electives 3                          |

B.A. Degree with a Major in Dance

The bachelor of arts degree with a major in dance does not require an audition. The B.A. degree is a more general program of study allowing the student insights into a broad range of creative and educational experiences while pursuing a liberal arts degree.

In addition to general degree requirements for a bachelor of arts degree, dance majors must complete a minimum of 42 hours in dance. A total of 120 semester hours is required for the bachelor of arts degree with a major in dance.

Required (42 hours total):

Dance Appreciation 3
Modern Dance Techniques (must be intermediate level) 6
Ballet Technique 3
Dance Improvisation 3
Dance Composition I 3
Dance Composition II 3
Dance History I — Preliterate through 18th Century 3

http://catalog.gmu.edu
Music

Requirements for the Major in Music (B.A., B.M.).

The two undergraduate degree programs prepare students for graduate work in music and music literature, for research and professional work in musical activities, and for state certification to teach vocal/general or instrumental music on the elementary and secondary levels. Entrance to all music degree programs is by audition. Arrangements for an audition must be made in advance by contacting the Department of Performing Arts before the scheduled audition date. Auditions are held in November, January, March, April, May, June, July, and August (normally on the first Monday of each month except for January and August, when dates are scheduled during the University registration period). Competency placement tests are required of all transfer students who desire to present transfer credit in any of the following areas: keyboard harmony, sight singing, ear training, and class piano. (For dates, see the Academic Calendar in the front of this catalog.)

B.A. Degree with a Major in Music. In addition to general degree requirements for a bachelor of arts degree, music majors must complete a minimum of 42 hours in music. A total of 120 semester hours is required for the bachelor of arts degree with a major in music.

Required (42 hours total):
- Harmony I, II, III, IV (11)
- Keyboard Harmony (1)
- Sight Singing and Ear Training I, II (4)
- Historical, Theoretical, and Analytical Study of Music (9)
- Class Piano I, II (2) (Keyboard majors must substitute MUSI 271 and 272)
- Major Instrument or Voice (Private Music Instruction) (8)
- Ensemble (7) (Voice majors must earn seven credits in University Chorale and/or Symphonic Chorus. Orchestral string majors must earn seven credits in Symphony Orchestra. Wind and percussion majors must earn seven credits in Symphony Orchestra and/or Symphonic Winds. Piano, organ, and guitar majors must earn at least four credits in large ensembles: University Chorale, Symphonic Chorus, Symphony Orchestra, Symphonic Winds.)

B.M. Degree. A total of 130 semester hours is required for the Bachelor of Music degree. A total of 139 semester hours is required for a concentration in music education. The requirements by area are as follows:

General Education
See general education requirements for B.M. degree in the College of Arts and Sciences section of the catalog.

Basic Musicianship

Harmony I, II, III, IV 11
Keyboard Harmony 1
Sight Singing and Ear Training I, II 4
Survey of World Music 3
Historical, Theoretical, and Analytical Study of Music I, II, III, IV 12
Class Composition and Arranging I 3
General Conducting 2
Class Piano I, II (Keyboard majors must substitute MUSI 271 AND 272) 2
Major Instrument or Voice (Private Music Instruction) 12

Ensemble (Voice majors must earn eight credits in University Chorale and/or Symphonic Chorus. Orchestral string majors must earn eight credits in Symphony Orchestra. Wind and percussion majors must earn eight credits in Symphony Orchestra and/or Symphonic Winds. Piano, organ, and guitar majors must earn at least four credits in large ensembles: University Chorale, Symphonic Chorus, Symphony Orchestra, Symphonic Winds. Voice, orchestral string, wind and percussion majors need earn only seven credits in the indicated ensembles if they are in the music education concentration.)

Music Concentration

To earn a B.M. degree, a music concentration must be selected from one of the following categories: accompanying, composition, performance, music history and literature, or music education.

Free Electives 22
Total 130
Concentrations in Music (Bachelor of Music)

Concentration in Accompanying (Nine semester hours must be earned in foreign languages; one semester each in French, German, and Italian.) For admittance into the concentration in accompanying, a student must be approved by an Accompanying Concentration Audition Committee.

The following required sequence of courses is in addition to those listed under Basic Musicianship (Bachelor of Music Degree).

Concentration in Accompanying (total of 18 semester hours)
Private Music Instruction (8) (The 12 credits listed under Major Instrument or Voice, Basic Musicianship, and the 8 credits listed under Private Music Instruction [Music Concentration in Accompanying] must be divided as follows: 8 credits in Undergraduate Private Music Instruction — Instrumental [piano or organ] and 12 credits at the 3-credit level in Undergraduate Private Music Instruction — Accompanying [piano].)
Junior Recital (1)
Senior Recital (1)
Music Literature (3) (Vocal, opera, or chamber music literature are recommended.)
Voice (Class Voice and/or Undergraduate Private Music Instruction) (2)
Diction (1) (Undergraduate Private Music Instruction in voice may be substituted.)
Chamber Ensembles (2)

Concentration in Composition
For admittance into the concentration in composition, a student must submit a portfolio of compositions and be approved by a faculty committee.

The following required sequence of courses is in addition to those listed under Basic Musicianship (Bachelor of Music degree).

Concentration in Composition (total of 18 semester hours)
Private Music Instruction — Composition (8)
Composition Recital (1)
Techniques of Twentieth-Century Style Analysis (3)
Theory Elective (3)
Advanced Conducting (2)
Improvisation (1)

Concentration in Performance
For admittance into the concentration in performance, a student must be approved by a Performance Concentration Audition Committee.

The following required sequence of courses is in addition to those listed under Basic Musicianship (Bachelor of Music degree).

Concentration in Keyboard Performance (total of 18 semester hours)
Major Instrument (Private Music Instruction) (8)
Junior Recital (1)
Senior Recital (1)
Keyboard Literature (3)
Keyboard Pedagogy (3)
Improvisation (1)
Music Elective (1)

Concentration in Vocal Performance (total of 18 semester hours) (Nine semester hours must be earned in French, German, Italian, or any combination of these.)
Private Voice (Private Music Instruction) (8)
Junior Recital (1)
Senior Recital (1)
Choral Literature or Operatic Literature (3)
Advanced Conducting (2)
Improvisation (1)
Ensembles (2)

Concentration in Winds/Strings/Percussion Performance
Major Instrument (Private Music instruction) (8)
Junior Recital (1)
Senior Recital (1)
Orchestral Literature (3)
Advanced Conducting (2)
Improvisation (1)
Ensembles (2)

Concentration in Music History and Literature (Twelve semester hours must be earned in German.)
For admittance into the concentration in music history and literature, a student must pass an aural music literature identification test, as well as demonstrate basic writing skills through an essay on an assigned topic.

The following required sequence of courses is in addition to those listed under Basic Musicianship (Bachelor of Music degree).

Concentrations in Music History and Literature (total of 18 semester hours)
Music Literature (12)
Theory Elective (3)
Independent Study (3)

Concentration in Music Education
(Virginia Certification to Teach Music)
The Music Education degree program is certified by the Virginia State Department of Education and the National Council for the Accreditation of Teacher Education (NCATE). General education courses and additional courses are derived from state certification and NCATE requirements as outlined under the Department of Education. The National Teachers Examination and the related music examination must be taken before state certification can be granted.

A total of 139 semester hours is required for the bachelor of music with a concentration in music education.

For admittance into the concentration in music education, a student must satisfy the following requirements:

1. Maintain an overall GPA of 2.8
2. Earn no grade lower than C in music courses needed for graduation
3. Maintain a satisfactory level of musical performance and interpersonal relationships as determined by a yearly screening procedure conducted by the music education faculty
4. Maintain a satisfactory level of oral communication
in course work and/or as determined by a formal evaluation by the end of the sophomore year. Transfer students must satisfy the requirement before applying for admittance to the Teacher Education Program. Students who need strengthening may be required to take COMM 120 or COMM 210.

5. Obtain a satisfactory recommendation from the full-time music faculty for the Teacher Education Screening Committee.

6. Meet all requirements set by the Teacher Education Screening Committee.

**B.M. Degree with Concentration in Music Education.** The requirements by area are:

**General Education**

- (Courses from the College of Arts and Sciences only) 32
- ENGL 101 and 302
- Literature 6
- Any course in literature at the 200 level or above in English or foreign languages and literatures 6
- HIST 121 or 122 3
- Social and/or behavioral science 9
- Laboratory science 8

**Basic Musicianship** 58

- Harmony I, II, III, IV 11
- Keyboard Harmony 1
- Sight Singing and Ear Training I, II 4
- Survey of World Music 3
- Historical, Theoretical, and Analytical Study of Music I, II, III, IV 12
- Class Composition and Arranging I 3
- General Conducting 2
- Class Piano I, II (Keyboard majors must substitute MUSI 271 and 272) 2
- Major Instrument or Voice (Private Music Instruction) 12
- Ensemble (Voice majors in the music education concentration must earn seven credits in University Chorale and/or Symphonic Chorus. Orchestral string majors must earn seven credits in Symphonic Orchestra. Wind and percussion majors must earn seven credits in Symphonic Orchestra and/or Symphonic Winds. Piano, organ, and guitar majors must earn at least four credits in large ensembles: University Chorale, Symphonic Chorus, Symphonic Orchestra, Symphonic Winds.) 7
- Laboratory Ensemble 1

**Music Education Concentration** 18

- Laboratory Ensemble 1
- Secondary Instruments/Voice 8

**Instrumental Emphasis.** The following second instrument/voice courses are required: Class Voice I and all of the following instrument classes: Class Guitar; Class Strings: Violin and Viola; Class Strings: Cello and String Bass; Class Woodwinds: Flute and Clarinet; Class Woodwinds: Oboe and Bassoon; Class Brass; Class Percussion.

Students whose major performance medium is something other than a band or orchestral instrument must earn a minimum of six additional credits of Private Music Instruction (or the equivalent) on such an instrument, the actual number to be determined by an audition committee.

**Vocal Emphasis.** One credit in each of the following courses is required: Class Woodwinds; Class Guitar; Class Percussion; Techniques of Accompanying. Keyboard majors must take Class Voice I and earn three credits of Undergraduate Private Music Instruction in voice. Voice majors must earn four credits of Undergraduate Private Music Instruction in piano. Guitar/percussion and other instrumental majors must take Class Voice I and earn one credit of Undergraduate Private Music Instruction in voice and two credits of Undergraduate Private Music Instruction in piano. Five of the seven required ensemble credits must be earned in University Chorale, Symphonic Chorus and/or Gloriana Singers.

- Advanced Conducting 2
- Improvisation 1
- Music Methods (MUSI 461 and 463 or 464 and 466) 6

**Additional Courses**

- Mathematics (Courses from the College of Arts and Sciences only) 3
- Mathematics or science (Courses from the College of Arts and Sciences only) 3
- Human Development (EDUC 509 or 510) 3
- Foundations of Elementary Education (EDUC 300) or Introduction to Secondary Education (EDUC 522) 2
- Learning Theory (EDUC 524) 2
- HEAL 110 3
- Modern Dance (Courses from the College of Arts and Sciences only) 3

**Student Teaching**

(May not be used to satisfy the 130 credit hours required for the bachelor of music degree.)

**Total** 139

-http://catalog.gmu.edu
### Sample Schedule for B.A. with a Major in Music

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Social Science</td>
</tr>
<tr>
<td>Foreign language 101</td>
<td>Foreign language 102</td>
</tr>
<tr>
<td>Harmony I</td>
<td>Harmony II</td>
</tr>
<tr>
<td>Sight Singing and Ear Training I</td>
<td>Sight Singing and Ear Training I</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature (English or Foreign Languages and Literatures)</td>
<td>Literature (English or Foreign Languages and Literatures)</td>
</tr>
<tr>
<td>Foreign language 201</td>
<td>Natural science</td>
</tr>
<tr>
<td>Natural science</td>
<td>Survey of World</td>
</tr>
<tr>
<td>Music Harmony III</td>
<td>Harmony IV</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 302</td>
<td>Social science</td>
</tr>
<tr>
<td>Mathematics or logic</td>
<td>Fine arts elective</td>
</tr>
<tr>
<td>Philosophy or religious studies</td>
<td>Historical, Theoretical, and Analytical Study of Music</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social science</td>
<td>Ensemble</td>
</tr>
<tr>
<td>Historical, Theoretical, and Analytical Study of Music</td>
<td>Major Instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Major Instrument or voice (Private Music Instruction)</td>
<td>Music concentration</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Semester</th>
<th>Tenth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musical concentration</td>
<td>Electives</td>
</tr>
<tr>
<td>Free electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sample Schedule for Bachelor of Music

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Social Science</td>
</tr>
<tr>
<td>Foreign language or nonmusic elective</td>
<td>Foreign language or nonmusic elective</td>
</tr>
<tr>
<td>Harmony I</td>
<td>Harmony II</td>
</tr>
<tr>
<td>Sight Singing and Ear Training I</td>
<td>Sight Singing and Ear Training I</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature (English or Foreign Languages and Literatures)</td>
<td>Literature (English or Foreign Languages and Literatures)</td>
</tr>
<tr>
<td>Natural science</td>
<td>Survey of World</td>
</tr>
<tr>
<td>Harmony III</td>
<td>Harmony IV</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 302</td>
<td>Historical, Theoretical, and Analytical Study of Music</td>
</tr>
<tr>
<td>Historical, Theoretical, and Analytical Study of Music</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Class Composition and Arranging I</td>
<td>General Conducting</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Music concentration</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Social science</td>
</tr>
<tr>
<td></td>
<td>Free elective</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical, Theoretical, and Analytical Study of Music III</td>
<td>Major instrument or voice (Private Music Instruction)</td>
</tr>
<tr>
<td>Major instrument or voice (Private Music Instruction)</td>
<td>Music concentration</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Semester</th>
<th>Tenth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music concentration</td>
<td>Electives</td>
</tr>
<tr>
<td>Free electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
### Sample Schedule for Bachelor of Music with Concentration in Music Education (Virginia Certification to Teach Music)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 101</strong></td>
<td><strong>Social or behavioral science</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Social or behavioral science</strong></td>
<td><strong>Harmony II</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Harmony I</strong></td>
<td><strong>Sight Singing and Ear Training I</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Sight Singing and Ear Training I</strong></td>
<td><strong>Class Piano II</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Class Piano I</strong></td>
<td><strong>Secondary</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Secondary instrument/voice</strong></td>
<td><strong>Major instrument or voice</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Major instrument or voice (Private Music Instruction)</strong></td>
<td><strong>Ensemble</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Ensemble</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Literature (English or Foreign Languages and Literatures)</strong></td>
<td><strong>Literature (English or Foreign Languages and Literatures)</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Historical, Theoretical and Analytical Study of Music I</strong></td>
<td><strong>Harmony IV</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Human Development</strong></td>
<td><strong>Keyboard Harmony</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Harmony III</strong></td>
<td><strong>Survey of World Music</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Secondary Instrument/Voice</strong></td>
<td><strong>Secondary Instrument/Voice</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Major Instrument or Voice (Private Music Instruction)</strong></td>
<td><strong>Major Instrument or Voice (Private Music Instruction)</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Ensemble</strong></td>
<td><strong>Ensemble</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Free Elective</strong></td>
<td><strong>Free Elective</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGL 302</strong></td>
<td><strong>Learning Theory</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Foundations of Education</strong></td>
<td><strong>HIST 121 OR 122</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Historical, Theoretical and Analytical Study of Music III</strong></td>
<td><strong>HEAL 110</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>General Conducting</strong></td>
<td><strong>Advanced Conducting</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Improvisation</strong></td>
<td><strong>Secondary Instrument/Voice</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Secondary Instrument/Voice</strong></td>
<td><strong>Major Instrument or Voice (Private Music Instruction)</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Major Instrument or Voice (Private Music Instruction)</strong></td>
<td><strong>Ensemble</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Ensemble</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Laboratory Ensemble</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>17</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mathematics</strong></td>
<td><strong>Music Methods</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Music Methods</strong></td>
<td><strong>Student Teaching</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td><strong>Composition and Arranging I</strong></td>
<td><strong>Secondary Instrument/Voice</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Secondary Instrument/Voice</strong></td>
<td><strong>Major Instrument or Voice (Private Music Instruction)</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Ensemble</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Laboratory Ensemble</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Free electives</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>16</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Suggested for Summer School

<table>
<thead>
<tr>
<th>Laboratory Science</th>
<th>Mathematics or Science</th>
<th>Modern Dance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

### Theatre

The Theatre Division of the Department of Performing Arts offers B.A. and B.F.A. degree programs that prepare students for graduate study in acting, directing, scene design, costume design, lighting design, technical theatre, history/theory/criticism, as well as for professional activities and research.

**B.A. Degree with a Major in Theatre.** In addition to the general requirements for the bachelor of arts degree, theatre majors must complete a minimum of 42 hours in the major: 33 hours of required courses and 9 hours of theatre electives. All majors are expected to participate in theatre productions.

Required courses for the B.A. degree with a major in theatre:
- **Script Analysis (3)**
- **Acting I (3)**
- **Introduction to Theatre Technology I and II (8)**
- **Fundamentals of Theatrical Design (3)**
- **Survey of Theatre History I and II (6)**
- **Directing I (3)**
- **Practicum — Courses such as Play Performance or Play Production Practicum (4)**
- **Seminar in Shapers of the Modern Theatre (3)**
- **Theatre Electives (9)**

Total 42 hours

**B.F.A. Degree with a Major in Theatre.** In addition to the general education requirements for the bachelor of fine arts degree, theatre majors must complete a minimum of 88 hours in the major: 33 hours of required courses and 55 hours in an area of emphasis. Areas of emphasis are (1) acting and (2) design/theatre technology. Students interested in directing are advised to follow the B.A. program.

Entry into the B.F.A. program with a major in theatre is by interview and audition or portfolio presentation only. In addition to demonstrating artistic potential in their chosen field, applicants must convince the faculty jury of their serious interest in the concentrated study of production and performance. Applicants should have sophomore standing and have completed THR 150, 230, 231, and 220 or 232, but should apply no later than the fall semester of their junior year. Special cases such as transfers or late changes of major may be permitted to apply for the B.F.A. after the fall semester of the junior year. However, given the extensive requirements of the major, such applicants should expect to enroll an extra semester or longer to finish the degree. See the Theatre Division Coordinator for details and a schedule of audition and presentation dates. Theatre majors are expected to participate in GMU theatre productions.

Required courses for the B.F.A. degree with a major in theatre:
- **Script Analysis (3)**
- **Acting I (3)**
### Performing Arts 87

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Theatre Technology</td>
<td>8</td>
</tr>
<tr>
<td>Fundamentals of Theatrical Design</td>
<td>(3)</td>
</tr>
<tr>
<td>Survey of Theatre History I and II</td>
<td>(6)</td>
</tr>
<tr>
<td>Directing I</td>
<td>(4)</td>
</tr>
<tr>
<td>Practicum — Courses such as Performance or Production Practicum</td>
<td>(4)</td>
</tr>
<tr>
<td>Seminar in Shapers of the Modern Theatre</td>
<td>(3)</td>
</tr>
<tr>
<td>Area of emphasis requirements</td>
<td>(55)</td>
</tr>
</tbody>
</table>

**Total 88 Hours**

**Area of Emphasis Requirements:**

1. Acting
2. Voice for the Theatre I and II (6)
3. Movement for the Theatre I and II (6)
4. Beginning Modern Dance or Beginning Ballet (3)
5. Dance Improvisation (3)
6. Stage Makeup (3)
7. Acting I (3)
8. Acting II (3)
9. Acting Styles I and II (6)
10. Acting Problems I and II (6)
11. Theatre Electives (9)
12. Performing Arts Electives — dance technique and/or music voice classes (7)

**Total 55 hours**

**2. Design/Theatre Technology**

1. Studio Fundamentals I and II (6)
2. Approved ARTS course — See adviser for list of approved courses (3)
3. Approved ARTH course — See adviser for list of approved courses (3)
4. Scene Design (3)
5. Lighting Design (3)
6. Costume Design (3)
7. Design Studios — Chosen from Scene Design Studio, Lighting Design Studio, or Costume Design Studio (6)
8. Advanced Theatre Technology or Costume History and Construction (3)
9. Design/Technical area electives (6)
10. Theatre Electives (9)
11. ARTS/Performing Arts Electives — dance, music, studio art, or art history (10)

**Total 55 hours**

### Sample Schedule for B.A. with a Major in Theatre Design/Theatre Technology Emphasis

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Script Analysis</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Intro to Theatre</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Tech I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>English 101</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Foreign Language</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Social Science</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 16**

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design Studio</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Adv Theatre Tech/ Design Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Theatre Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Practicum</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Arts/Perf Arts Elec</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 17**

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directing I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Theatre Hist I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Approved English course</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Natural Science</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Non-Western Culture</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 16**

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design Studio</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Adv Theatre Tech/ Design Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Theatre Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Practicum</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Arts/Perf Arts Elec</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 15**

### Sample Schedule for B.F.A. with a Major in Theatre

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Script Analysis</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Intro to Theatre</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Tech I</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>English 101</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Foreign Language</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Social Science</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 16**

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design Studio</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Adv Theatre Tech/ Design Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Theatre Elective</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Practicum</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Arts/Perf Arts Elec</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 17**

### 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.

[http://catalog.gmu.edu](http://catalog.gmu.edu)
Philosophy and Religious Studies

Faculty

Professors: Bergoffen, Lavine (Robinson Professor), McFarlane (Emeritus Professor)
Associate Professors: De Nys (Acting Chair), Fletcher, Froman, Holman, Jordan, McDermott, Ro, Rothbart, Yance
Assistant Professors: Burns, Hill
Lecturer: Gregory

Course Work

This department offers all course work designated LS, PHIL, and RELI in the Course Descriptions section of this catalog.

Degree Requirements

B.A. Degree with a Major in Philosophy. The degree program in philosophy is designed to meet the needs of students with various interests and career goals. Major concentrations are available for students who wish to (a) pursue graduate studies in philosophy; (b) emphasize philosophy in acquiring a broad liberal arts education; (c) prepare for certain professions, such as law, the ministry, government service; or (d) complement other interests by taking a double major in philosophy and some related field of study.

The department offers a traditional philosophy major, a specially designed philosophy-English major in cooperation with the English Department, and a specially designed religion track within the philosophy major. Each of these programs leads to a B.A. in philosophy.

The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in philosophy.

Traditional Philosophy Major. In addition to the general requirements for a bachelor of arts degree, philosophy majors must complete at least 33 semester hours in philosophy. At least 21 semester hours must be courses at the 300 level or above, including six credit hours at the 400 level or above.

These hours must be distributed in the following way:

1. All majors must take:
   PHIL 173: Introduction to Logic or PHIL 376: Symbolic Logic
   (formerly 273): Introduction to Symbolic Logic
   PHIL 301: History of Western Philosophy (Ancient)
   PHIL 303: History of Western Philosophy (Modern)

2. All majors must submit a minimum of three credits each from category A and category B courses:
   Category A: The Analytic Tradition
   PHIL 332: Twentieth-Century Analytic Philosophy
   PHIL 355: Contemporary Ethical Theory
   PHIL 371: Philosophy of Natural Sciences
   PHIL 373: Theory of Knowledge
   PHIL 374: Philosophy of Mind
   PHIL 574: Current Issues in Philosophy of Psychology
   Category B: The Continental Tradition
   PHIL 325: Karl Marx's Social and Political Thought
   PHIL 336: Nineteenth-Century Philosophy
   PHIL 337: Contemporary Continental Thought
   PHIL 531: Freud and Philosophy

3. All majors may submit no more than three credits from category C as credit toward the major:
   Category C: PHIL 305: Business Ethics
   PHIL 306: Criminal Justice Ethics
   PHIL 309: Medicine and Human Values
   PHIL 510: Seminar in Ethics of Health Care
   PHIL 555: Environmental Ethics

For students who plan to pursue graduate studies in philosophy, the following courses are recommended:
   Ethics or Social and Political Philosophy; Metaphysics;
   Philosophy of Mind or Theory of Knowledge; Twentieth-Century Analytic Philosophy; Contemporary Continental Thought (Existentialism and Phenomenology).

Religious Studies Track in Philosophy. This program offers students the opportunity to reflect on reciprocal relations, past and present, between philosophy and religion, and to approach contemporary questions and issues in religion, both substantive and methodological, through philosophical ideas pertinent to them. Students who plan to pursue a program in philosophy and religious studies must complete at least 33 semester hours in philosophy and religious studies. All students pursuing this track must take:
   PHIL 173: Introduction to Logic or PHIL 376 (formerly 273): Introduction to Symbolic Logic
   PHIL 301: History of Western Philosophy (Ancient)
   PHIL 303: History of Western Philosophy (Modern)
   PHIL 313: Philosophy of Religion
   RELI 300: Approaches to the Study of Religion
   RELI 490: Comparative Religions

All students pursuing this track must submit a minimum of nine credits from among the following courses:
   RELI 315: Buddhism
   RELI 370: Judaism
   RELI 371: History of Western Christian Thought (I)
   RELI 372: History of Western Christian Thought (II)
   RELI 374: Islamic Thought

All students pursuing this track may submit six hours of credit from among the following courses for credit toward the major:
   HIST 306: Reformation
   SOCI 385: Sociology and Religion
   ANTH 313: Anthropological Perspectives on Religion
   ENGL 320: Myth and Symbol in Western Literature
Philosophy-English Double Major. Students interested in pursuing the specially designed joint major in philosophy and English must fulfill distribution and core requirements of each major. Students pursuing this program must take one class in philosophy and one in English from the following list of theoretical or methodological courses (six credits). Both courses will count toward both majors (i.e., the philosophy course will be counted as part of the English major hours and vice versa).

ENGL 320: Myth and Symbol in Western Literature
ENGL 494 (313): Critical Approaches to Literature
ENGL 551: Literary Criticism
PHIL 356: Philosophy of Art
PHIL 372: Philosophical Methods

Students must take six credits from one of the following pairs of historical courses. Both courses count toward both majors. (Some classes of English 496, 444, 446, and Philosophy 391, 392, 421, 422, 423, and 424 may fulfill these requirements, with the prior permission of the departments.)

1. ENGL 341: Chaucer; or ENGL 342: Literature of Middle Ages; or ENGL 431: Medieval Intellectual Topics
   PHIL 302: History of Western Philosophy (Medieval)
2. ENGL 401 (345): Literature of Sixteenth Century, or ENGL 472 (346): Spenser
   PHIL 301: History of Western Philosophy (Ancient)
3. ENGL 405 (358), 406 (361), 450 (370), 423 (381)
   PHIL 303: History of Western Philosophy (Enlightenment)
4. ENGL 425 (382): Literature of American Renaissance, or ENGL 452 (387): American Novel to 1914
   PHIL 331: Philosophy in the United States
5. ENGL 380, 390, 556 (555) (contemporary literature or language study)
   PHIL 332: Twentieth-Century Analytic Philosophy
6. ENGL 448 (375), 376, 377, 378, 454 (388) or 447 (389): continental literature or influence
   PHIL 336 or 337: Contemporary Continental Thought: Phenomenology and Existentialism
7. ENGL 369: Women and Literature
   PHIL 333: Philosophy and Feminism

Students must take a four-credit, 500-level seminar. 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. Prerequisites are senior standing, six hours of 300 level English and six hours of 300 level philosophy, and permission of instructor.
Physics

Faculty

Professors: Ehrlich (Chair), Ellsworth, Kafatos, Lankford, Lieb, Mielczarek, Trefil (Robinson Professor)

Associate Professors: Ceperley, Dworzecka, Evans, Flinn

Assistant Professors: Kowalski, Satija, Toth-Allen

Instructor: Hannigan

Course Work

This department offers all course work designated ASTR and PHYS in the Course Descriptions section of this catalog.

Degree Requirements

B.S. Degree with a Major in Physics. In addition to general requirements, a bachelor of science in physics requires the completion of 45 semester hours in the major and 20 semester hours in mathematics. The following physics courses constitute a required 34-hour core for the B.S. degree: PHYS 111, 250, 350, 351, 352, 353, 361, 303, 305, 306, 402, 407 and 416 (may be taken for credit twice). The remaining 11 credits are to be elected from ECE 301, 302, PHYS 307, 328, 355, 408, 412, 414, 417, 428, 510, 511, 512, 514, ECE 341, 342, 430, 432, 441, 460, MATH 446 and 447, with at least five semester hours in physics courses. The following mathematics courses are required: the two-year calculus sequence (MATH 113, 114, 213 and 304); PHYS 311 or MATH 313; PHYS 312 or MATH 314.

The requirements for the B.S. in physics allow the student the flexibility of preparing for graduate school or for one of the many careers in business or industry where physics graduates are employed. In meeting the requirement for 11 credit hours outside the core, a student has the option of electing an area of concentration. The courses composing each concentration are listed below. Students who wish to complete a concentration should plan a program of study in consultation with their adviser, with whom they are required to meet at least once a semester.

Graduate School Preparatory Concentration.

Although any of the options listed here provide the successful student with a fully adequate background to enter graduate school, this concentration is for the student whose career goals definitely include graduate school in physics. To complete this concentration the student should take at least nine hours from the following courses: PHYS 414, 510, 511, 512 and 514. In addition, the student should complete a senior project (PHYS 408) in the specialty which they intend to pursue in graduate school.

Computational Physics Concentration. This concentration is for the student who wishes to pursue a career that applies computers to the solution of physical problems. To complete this concentration, the student should take at least nine hours from the following courses: PHYS 412, ECE 441, MATH 446 and 447. In addition, the student should complete a senior project (PHYS 408) on a problem that involves the use of the computer for the solution of a physical problem.

Astrophysics Concentration. This concentration is for the student who is planning to attend graduate school in astrophysics or pursue a career in industry. To complete this concentration the student should take the following courses: PHYS 328, PHYS 428 or PHYS 510 or PHYS 511; and MATH 446. In addition, the student should complete a senior project (PHYS 408) on an astrophysics problem.

Electronics Concentration. This concentration is for the student who wishes to pursue a career in industry applying a strong background in electronics to physical problems. To complete this concentration, the student should take at least nine credit hours from the following courses: ECE 301, 302, 341, 342, 430, 432, and 460. In addition, the student should complete a senior project (PHYS 408) on an electronics problem.

Applied Solid State Physics Concentration. This concentration is for the student who wishes to pursue a career in the semiconductor industry. To complete this concentration, the student should take the following courses: PHYS 512, ECE 430 and 431, and complete a senior project (PHYS 408) in applied solid state physics.

B.A. Degree with a Major in Physics. In addition to general degree requirements, a B.A. in physics requires the completion of 31 semester hours in the major and 17 semester hours of mathematics. The following physics courses are required: PHYS 111, 250, 350, 351, 352, 353, 303, 305, 306, 402, and either 407 or ECE 302.

PAGE Students. The general education requirements (with the exception of foreign language) for the B.A. degree are satisfied by successful completion of the Plan for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in physics.

Secondary Teacher Certification. Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

Course Work

PHYS 343-345 are recommended for biology, chemistry, geology, and premedical students and for mathematics majors who seek a bachelor of arts degree. PHYS 106 and 107 are also recommended for biology majors.
PHYS 103, 104, 141, 201, 300, 315, 316 are intended for non-science majors. PHYS 250, 350, 351, 352, and 353 consist of a calculus-based sequence in general physics to be taken by physics and engineering majors and chemistry, computer science, and mathematics students who pursue a bachelor of science degree. Students may receive credit for only one of the following three sequences: 343-345 or 103, 104 or 250, 350, 351, 352, 353.

Students who intend to major in physics should take the University physics introductory sequence (PHYS 350, 351, 352, 353). However, students who decide to major in physics after completing PHYS 343-345 may do so, but only with written permission of the physics department. Such students will be required to take at least five additional credits in approved physics courses.

**Sample Schedule for Physics Majors**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 111</td>
<td>PHYS 250</td>
</tr>
<tr>
<td>MATH 113</td>
<td>MATH 114</td>
</tr>
<tr>
<td>CHEM 211 or BIOL 113</td>
<td>CHEM 212 or BIOL 114</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 350</td>
<td>PHYS 352</td>
</tr>
<tr>
<td>PHYS 351</td>
<td>PHYS 353</td>
</tr>
<tr>
<td>MATH 213</td>
<td>MATH 304</td>
</tr>
<tr>
<td>Literature</td>
<td>Literature</td>
</tr>
<tr>
<td>Elective</td>
<td>Computer science</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 303</td>
<td>PHYS 306</td>
</tr>
<tr>
<td>PHYS 305</td>
<td>ECE 302</td>
</tr>
<tr>
<td>PHYS 361</td>
<td>PHYS 355</td>
</tr>
<tr>
<td>MATH 313</td>
<td>MATH 314</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 402</td>
<td>PHYS 408</td>
</tr>
<tr>
<td>PHYS 407</td>
<td>PHYS 414</td>
</tr>
<tr>
<td>PHYS 416</td>
<td>PHYS 416</td>
</tr>
<tr>
<td>PHYS 510</td>
<td>PHYS 512</td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td>Physics elective</td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Semester</th>
<th>Tenth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 503</td>
<td>PHYS 504</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

**Psychology**

**Faculty**

**University Professor:** Fleishman

**Professors:** Barocas, Boneau, King, Mandes, Pasnak, Tyer

**Associate Professors:** Allen, Blaha, Buffardi, Erdwins, Flinn (Chair), Gessner, Holt, Lehman, Maddux, Mellinger, Moretz, Riskind, Rugel, Sanford, R. Smith, Wahl

**Assistant Professors:** Boehm-Davis, Denham, Friedman, Goplerud

**Adjunct Professors:** Pence, V. Smith, Weisman

**Research Professor:** Ballas

**Lecturers:** Byrd, Chollar, Dewitt, Goodman, Happ, Hybertson, Mutchler, Nimmich, Ronseville, Ross, Schiavone, Stanhope, Werber

**Course Work**

This department offers all course work designated PSYC in the Course Descriptions section of this catalog.

**Degree Requirements**

**B.A. Degree with a Major in Psychology.** In addition to general requirements for a B.A. degree, students must complete 36 semester hours of course work in psychology, of which 24 must be upper division. These hours must include PSYC 100, 300; either 360 or 365; and one of the following: PSYC 304, 305, or 309. Hours earned in psychology may be applied to both the general degree requirement and the psychology major.

**B.S. Degree with a Major in Psychology.** Students who wish to graduate with the B.S. degree with a major in psychology must complete the following requirements:

1. Psychology: 38 semester hours, of which 24 must be upper division, including PSYC 100, 300; either 360 or 365; and two of the following: 304, 305, 309, 323 or 372-373. (One of the courses must be 304, 305, or 309.)

2. BIOL 113, 114.


4. CS 103 with CS 262 strongly recommended.
5. Nine additional hours of behavioral, natural, or social science, other than psychology, that are not applied to any other requirement.


7. Literature: 6 semester hours.

8. Cognate Courses: 24 semester hours.


There are six specialty areas for the B.S. degree in psychology: clinical, developmental, experimental, industrial, physiological, and social. For each of these specialty areas there is a list of cognate courses that are not in psychology but in related subjects. Twenty-four semester hours of cognate courses must be chosen from one of these approved lists. Students are also required to take psychology courses in their specialty area as determined by their adviser. Before or during their junior year, written approval of cognate and psychology specialty courses must be obtained.

Students are required to plan their program of courses with a B.S. adviser in their specialty area. The planned program is then submitted to the undergraduate coordinator for final approval. Students who have not obtained approval by the end of their junior year may not be allowed to graduate with a B.S. degree in psychology. For information concerning cognate areas and specific courses within each cognate, students should contact the psychology department.

Students planning to go to graduate school should ascertain whether the school they plan to attend has a foreign language requirement. If there is one, the student should select foreign language courses as electives.

**B.A. and B.S. Degrees with a Major in Psychology.**

A grade of D in a required psychology course may not be used toward graduation. At least 24 of the semester hours credited toward the major must be completed at the 300 level or above. Students intending to major in psychology should note that PSYC 300 is a prerequisite to required 300-level laboratory courses. In addition, it is recommended that students planning to pursue graduate study in psychology take PSYC 320, 372, 373, and CS 103 and 262.

In addition to course work, undergraduate research experience and letters of recommendation are major factors for admission to graduate school. It is therefore recommended that students interested in graduate school distribute courses across a number of areas in psychology and work closely with one or more professors on an individual research project during the junior and senior years.

Students interested in developing skills in the application of psychology may wish to earn a psychology technician certificate or a gerontology certificate. These programs provide students with technical expertise for use in human service employment settings at the paraprofessional level. No more than 6 semester hours of PSYC 326, 421, 422, 548, and 549 may be used to satisfy either the 36-hour psychology requirement for the B.A. degree, the 38-hour psychology requirement for the B.S. degree, or the 24-hour requirement in psychology at the 300 level or above. Further information on these certificate programs may be found under Certificate Programs in this catalog.

**PAGE Students.** The general education requirements for the B.A. and B.S. degrees (with the exception of foreign language for the B.A.) are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office for sample schedules for majors in psychology.

### Sample Schedule for B.A. Psychology Majors

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Non-Western</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>200-level PSYC</td>
</tr>
<tr>
<td>Natural Science</td>
<td>Natural Science</td>
</tr>
<tr>
<td>Elective</td>
<td>Philosophy</td>
</tr>
<tr>
<td></td>
<td>Religious Studies</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature</td>
<td>Literature</td>
</tr>
<tr>
<td>Math or logic</td>
<td>PSYC 304, 305, 309</td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
</tr>
<tr>
<td>PSYC 300</td>
<td>PSYC (any)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Non-Western</td>
</tr>
<tr>
<td>Fine Arts</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 302</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>PSYC (300/400)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>GEOG/HIST</td>
</tr>
<tr>
<td>PSYC 360 or 365</td>
<td>Electives</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON/GOV'T/</td>
<td>PSYC (300/400)</td>
</tr>
<tr>
<td>GEOG/HIST</td>
<td>Electives</td>
</tr>
<tr>
<td>PSYC (300/400)</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Note: Students must select electives so that a total of 45 upper-division hours are earned.

### Sample Schedule for B.S. Psychology Majors

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>PSYC (200 level)</td>
</tr>
<tr>
<td>PSYC 100</td>
<td>BIOL 114</td>
</tr>
<tr>
<td>BIOL 113</td>
<td>MATH 3-4</td>
</tr>
<tr>
<td></td>
<td>13-14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 300</td>
<td>CS 103</td>
</tr>
<tr>
<td>Literature</td>
<td>Literature</td>
</tr>
<tr>
<td>Behavioral, natural or social science</td>
<td>Behavioral, natural or social science</td>
</tr>
<tr>
<td>Electives</td>
<td>PSYC 304, 305, 309</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
Fifth Semester
ENGL302 3  
PSYC 304, 305, 309, 323, or 372-373 4  
Cognate 4  
Electives 6  

Sixth Semester
PSYC 360 or 365 4  
Cognates 6  
PSYC (300/400) 3  
Elective 3  

Seventh Semester
Cognates 8  
PSYC (300/400) 6  
Elective 3  

Eighth Semester
Cognates 6  
PSYC (300/400) 6  
Elective 3  

Note: Approval of program of studies is required by the department before or during the junior year.

Secondary Teacher Certification. Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

Public Affairs

Faculty
Robinson Professors: Heclo, Paden
Distinguished Professors: W. Anderson, Fisher
Visiting Commonwealth Professors: Alexander, Hart-Nibbrig
Professors: Clark, Dawisha, Stillman
Research Professors: Cole (Director, Public Management Institute), Thomas
Visiting Professors: Gibbons, Knowles
Associate Professors: Andrews (Director, Geography Program), Brown, Fonseca (Associate Dean, Graduate School), Gortner (Chair), Haack, Knight, Hung Nguyen (Director, Indochina Institute), Pfiffner, Plant (Director, DPA Program), Sacco (Associate Chair), Sandole (joint appointment with Center for Conflict Analysis and Resolution), White
Adjunct Associate Professor: E. Anderson
Assistant Professors: Dudley (Director, Law Enforcement Program), Friedlander, Lindberg, Mahler, Ostrowski, Rundstrom, Travis
Adjunct Assistant Professors: Brand, First
Lecturers: Ahn, Bailey, Capelle, Corrigan, Davis, Dilger, El-Yacoubi, Froelich, Guzman, Harrison, Keller, McCampbell, McIntyre, McNaught, Mitchell, Neal, Rogers, Simmons, Stephenson, Thacker, Tucker, Walochik, Whittaker, Yeager

Course Work
This department offers all course work designated GECA, GEOG, GOVT, PUAD, and PUAF in the Course Descriptions section of this catalog.

Degree Requirements
PAGE Students. The general education requirements (with the exception of foreign language) for the B.A. and B.S. (except law enforcement) degrees are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in geography, government and politics, international relations, and public administration.

Secondary Teacher Certification. Students who wish to become secondary school teachers should consult the secondary adviser in their discipline. The
state-approved teacher preparation programs are outlined in the catalog under the Department of Curriculum and Instruction. Students requiring Information about Virginia minimum teaching requirements should contact the Certification Specialists in the Office of the Dean of the College of Education and Human Services (Room 2237 Robinson Hall).

B.A. Degree with a Major in Geography. To be eligible to graduate with a B.A. with a major in geography, a student must complete at least 120 semester hours of work and satisfy all requirements for the bachelor of arts degree prescribed by the University.

A candidate for the degree must present 37 semester hours of credit in geography to include GEOG 301, 304, 305, 306, and 309. STAT 250 is also required but may not be counted toward the 37 hours in geography. In addition, a student may offer a maximum of three of the following regional courses toward the degree: GEOG 280, 315, 316, 320, 325, 330, and 335.

B.A. Degree with a Major in Government and Politics. To obtain a B.A. in government and politics, a student must complete 120 semester hours of course work and satisfy all requirements for the B.A. degree prescribed by the College of Arts and Sciences.

Each candidate for the degree must complete the following:

<table>
<thead>
<tr>
<th>General education requirements</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Required core: GOVT 103, 132, 241, 250</td>
<td>12</td>
</tr>
<tr>
<td>2. Distributive requirements of 8 courses, no more than 2 in any one field below:</td>
<td>24</td>
</tr>
<tr>
<td>American Institutions: GOVT 301-309, 401-409</td>
<td></td>
</tr>
<tr>
<td>Political Behavior: GOVT 310-319, 410-419</td>
<td></td>
</tr>
<tr>
<td>Political Theory: GOVT 320-329, 420-429</td>
<td></td>
</tr>
<tr>
<td>Comparative &amp; Regional: GOVT 330-339, 430-439</td>
<td></td>
</tr>
<tr>
<td>International Relations: GOVT 340-349, 440-449</td>
<td></td>
</tr>
<tr>
<td>GOVT 480 internship or 490 seminar may be substituted for one of the upper-division courses with prior approval of adviser.</td>
<td></td>
</tr>
<tr>
<td>3. One skills course chosen from GOVT 461, 462, 463, CS 103, IRM 201, STAT 250</td>
<td>3</td>
</tr>
<tr>
<td>4. Electives (depending on fulfillment of non-Western requirement)</td>
<td>21-27</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

B.A. Degree with a Major in International Studies.

To earn a B.A. with a major in international studies, a student must complete 120 semester hours of course work and satisfy all requirements for the B.A. degree prescribed by the College of Arts and Sciences.

Each candidate for the degree must complete the following:

1. A required core of courses amounting to 56 hours distributed as follows:

<table>
<thead>
<tr>
<th>Communication</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition (ENGL 101, 302)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (COMM 100, 101 110, 120, 130)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language</td>
<td>12</td>
</tr>
<tr>
<td>Analytical reasoning</td>
<td>3</td>
</tr>
<tr>
<td>Humanities</td>
<td>12</td>
</tr>
<tr>
<td>Literature</td>
<td>6</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy or Religious Studies</td>
<td>3</td>
</tr>
<tr>
<td>Social sciences</td>
<td>12</td>
</tr>
<tr>
<td>ECON 103, 104</td>
<td>6</td>
</tr>
<tr>
<td>ANTH 114, 332 (meet non-Western req.)</td>
<td>6</td>
</tr>
<tr>
<td>Laboratory science</td>
<td>8</td>
</tr>
</tbody>
</table>

2. A required core of international studies courses amounting to 24 hours distributed as follows:

<table>
<thead>
<tr>
<th>Required core</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVT 132, 133 (preferably in freshman year)</td>
<td>6</td>
</tr>
<tr>
<td>HIST 130, GOVT 244 (preferably in sophomore year)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 340, 341 (preferably in junior year)</td>
<td>6</td>
</tr>
<tr>
<td>GOVT 449 (must be completed in last semester)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 380 or 390</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Advanced courses in international studies amounting to 18 hours distributed as follows:

<table>
<thead>
<tr>
<th>CoursesCHOSEN FROM</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two courses from GOVT 330s, 430s</td>
<td>6</td>
</tr>
<tr>
<td>Two courses from GOVT 340s, 440s</td>
<td>6</td>
</tr>
<tr>
<td>Two courses from a selected list of courses drawn from other disciplines including geography, history, economics, sociology, anthropology, and foreign languages (list to be revised annually) (3 hours of GOVT 480 or 490 may be substituted for the GOVT hours with permission of adviser)</td>
<td></td>
</tr>
<tr>
<td>4. Free Electives</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

B.S. Degree with a Major in Law Enforcement. This interinstitutional and interdisciplinary program requires a minimum of 128 semester hours of course work. Participants should familiarize themselves fully with the requirements for this degree and with the academic regulations of George Mason University. Credits earned in law enforcement courses may not be transferred to other majors. Not more than one-half of the 128 semester hours required by this program may be transferred to the University from one or more junior or community colleges.

The quantitative and distributional requirements which must be fulfilled by candidates for this degree are summarized below. English composition or an equivalent course must be completed prior to entry into the program at the University. Except for the specified professional courses and English composition, all requirements may be completed at this University.
Requirements for the B.S. with a Major in Law Enforcement

Minimum Quantitative and Distributional Requirements by Subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General</td>
<td>23</td>
</tr>
<tr>
<td>English 101 and 302</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>6</td>
</tr>
<tr>
<td>A two-semester course in one recognized science with a laboratory</td>
<td>8</td>
</tr>
<tr>
<td>Management (MGMT 301)</td>
<td>3</td>
</tr>
<tr>
<td>2. Major requirements</td>
<td>38</td>
</tr>
<tr>
<td>Law enforcement — Northern Virginia Community College (NVCC)</td>
<td>24</td>
</tr>
</tbody>
</table>

The following courses taught at NVCC and described in the course dictionary of that institution's current catalog are required:

- ADJU 100, 114, 115, 116, 186, 228, 231, 232, 233, 246, 247, 248
- At GMU: GOVT 371, 372, 376, 377
- (PHIL 306 may be substituted for either GOVT 376 or 377.)

3. Directly related

- Government — to consist of:
  - At GMU, GOVT 103 or at NVCC, G 281 and 282 or 187 and at GMU, GOVT 204 or at NVCC, G 188 and at GMU, GOVT 241
  - Required: GOVT 301, 356, and 451; and one course from among GOVT 309, 320, or 420
  - Psychology — to consist of:
    - At GMU, PSYC 100 or at NVCC, Psyc 201 and 202 and at GMU, PSYC 314, 325
  - Sociology — to consist of:
    - At GMU, SOCI 101 or at NVCC SOCI 101 and 102 and at GMU, four courses selected from SOCI 301, 302, 304, 307, 308, 332, 402, and 471

4. Electives

Sufficient credit hours earned in courses of the student's choice as may be necessary to bring the total presented for graduation to 128 semester hours, to include 45 hours of courses selected from 300 and 400 levels.

Total

128

B.S. Degree with a Major in Public Administration.

This program of study comprises a core of work in government and politics and appropriate courses in other subjects. Students must earn 123 semester hours of credit and meet general degree requirements set for the B.S. degree by work falling within the following pattern:
## Sociology and Anthropology

### Faculty

**Professors:** Bateson (Robinson Professor, Anthropology), Burns (Visiting Robinson Professor, Sociology), Gittler (Sociology), Krech (Anthropology), Scimecca (Sociology), Williams (Anthropology)

**Associate Professors:** Avruch (Anthropology), Black (Sociology, Acting Chair), Borkman (Sociology), Dietz (Sociology), Horton (Sociology), Kolker (Sociology), Palkovich (Anthropology), Rader (Sociology), Rosenblum (Sociology, Coordinator), Tavan (Anthropology), Williams (Anthropology)

**Assistant Professors:** Colvin (Sociology), Golomb (Anthropology), Jacobs (Sociology), Little (Acting, Anthropology)

**Lecturers:** Gerber (Anthropology), Kalof (Sociology), Mashayekhi (Sociology), Neuschatz (Sociology), Peery (Sociology), Trencher (Anthropology).

### Course Work

This department offers all course work designated ANTH and SOCI in the Course Descriptions section of this catalog.

### Degree Requirements

**B.A. Degree with a Major in Anthropology.** In addition to meeting the general requirements for a B.A. degree in the College of Arts and Sciences, students majoring in anthropology must complete 36 hours in anthropology, including ANTH 114, 120, 135, 332, 380, and 490, and 15 additional hours at the 300-400 level. SOCI 311 is also required. SOCI 221 may apply toward the 36-hour requirement in anthropology. ENGL 481 (General Linguistics) may substitute for ANTH 380.

Within the Anthropology Program are three optional concentrations: sociocultural anthropology, applied anthropology, and archaeology. A certificate in applied archaeology is also offered. Suggested courses in anthropology and electives in other departments for each of these concentrations are detailed in description of the program, available at the Anthropology Office.

### Sample Schedule for a B.A. Degree with a Major in Anthropology

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Literature</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science</td>
</tr>
<tr>
<td>ANTH 114, 120</td>
<td>ANTH 135</td>
</tr>
<tr>
<td>Psychology,</td>
<td>Analytic reason</td>
</tr>
<tr>
<td>sociology*</td>
<td>Economics,</td>
</tr>
<tr>
<td></td>
<td>geography,</td>
</tr>
<tr>
<td></td>
<td>government,</td>
</tr>
<tr>
<td></td>
<td>history*</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral communication</td>
<td>Philosophy or</td>
</tr>
<tr>
<td>Foreign language</td>
<td>religious studies*</td>
</tr>
<tr>
<td>Economics,</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>geography,</td>
<td>Literature</td>
</tr>
<tr>
<td>government,</td>
<td>ANTH</td>
</tr>
<tr>
<td>history*</td>
<td>6</td>
</tr>
<tr>
<td>Psychology,</td>
<td></td>
</tr>
<tr>
<td>sociology*</td>
<td></td>
</tr>
<tr>
<td>ANTH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Summer</th>
<th>Fifth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 220</td>
<td>ENGL 302</td>
</tr>
<tr>
<td></td>
<td>Foreign language</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ANTH 380 (or</td>
</tr>
<tr>
<td></td>
<td>ENGL 481)</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Fine Arts*</td>
<td>ANTH</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH electives*</td>
<td>ANTH 490</td>
</tr>
<tr>
<td></td>
<td>electives</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

*Come to Anthropology Office for guidance about electives.

In addition to the above requirements for majors, students are advised to elect other relevant anthropology courses, as well as courses in biology, philosophy, psychology, government, and politics.

### Secondary Teacher Certification.

Students who wish to become secondary school teachers should consult with the secondary education adviser in their department. The professional preparation component of the state-approved teacher education programs for secondary school teachers is offered in the Department of Curriculum and Instruction. See Certification for Secondary School Teaching under that department.

### PAGE Students.

The general education requirements (with the exception of foreign language) for the M.A. degree are satisfied by successful completion of the Program for Alternative General Education (PAGE). See PAGE category in this catalog, and see PAGE office (Thompson 222) for sample schedule for majors in sociology.

---

[http://catalog.gmu.edu](http://catalog.gmu.edu)
B.A. Degree with a Major in Sociology. In addition to the general requirements for a B.A. degree, 35 semester hours of work in sociology are required. Students must include SOCI 101, 221, 303, 311, and 412, and 18 additional hours at the 300 and 400 level. ANTH 332 may apply toward the 35-hour sociology requirement.

### Sample Schedule For B.A. Degree with a Major in Sociology

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 101</td>
<td>SOCI (300-400)</td>
</tr>
<tr>
<td>ENG 101</td>
<td>Literature</td>
</tr>
<tr>
<td>Foreign language</td>
<td>Foreign language</td>
</tr>
<tr>
<td>Natural science</td>
<td>Natural science</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI (300-400)</td>
<td>SOCI (300-400)</td>
</tr>
<tr>
<td>Oral communication</td>
<td>SOCI 221</td>
</tr>
<tr>
<td>Foreign language</td>
<td>ENGL 302</td>
</tr>
<tr>
<td>Analytical reasoning</td>
<td>ANTH 114</td>
</tr>
<tr>
<td>Elective</td>
<td>Foreign language</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI (300-400)</td>
<td>SOCI 311</td>
</tr>
<tr>
<td>Elective</td>
<td>SOCI (300-400)</td>
</tr>
<tr>
<td>SOCI 303</td>
<td>Fine Arts</td>
</tr>
<tr>
<td>ANTH 332</td>
<td>Economics,</td>
</tr>
<tr>
<td>Philosophy or</td>
<td>government,</td>
</tr>
<tr>
<td>religious studies</td>
<td>geography, or</td>
</tr>
<tr>
<td></td>
<td>history elective</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI (300-400)</td>
<td>SOCI 412</td>
</tr>
<tr>
<td>Economics,</td>
<td>SOCI (300-400)</td>
</tr>
<tr>
<td>government,</td>
<td>Electives</td>
</tr>
<tr>
<td>geography, or</td>
<td></td>
</tr>
<tr>
<td>history</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

|                  |                 |
|                  | 15              |
School of Business Administration

Accounting and Business Legal Studies
Decision Sciences
Finance
General Business Administration
Management
Marketing

The School of Business Administration strives to provide its students with high-quality education in business administration and to prepare students for the changing community needs and market demands of today's world. The school has attracted and continues to support a multidisciplinary faculty that meets the diverse intellectual interests of a wide variety of students.

Acknowledging the interdependence of the University, the community and the business sector, the school encourages its faculty members to balance teaching, research, scholarship, and community service. The school also tries to foster an atmosphere of open communication between students and faculty, with benefits to both the University and society at large.

Administration

The administrative offices for the School of Business Administration are on the third and fourth floors of Robinson Hall.

Coleman Raphael, Dean
Richard L. Coffinberger, Associate Dean for Academic Programs
John W. O'Malley, Associate Dean for External Programs
James V. Fare, Assistant to the Dean
Penny Webb, Academic Adviser

Course Work

The School of Business Administration offers all course work designated ACCT, BULE, DESC, FNAN, IRM, MGMT, and MKTG in the Course Descriptions section of this catalog.

Bachelor of Science Degree

The programs in business administration offered by the University culminate in a B.S. degree with majors in accounting, decision sciences, finance, general business administration, management, or marketing. A minimum of 122 hours of course work is required, of which at least 45 hours must be at the 300 or 400 level.

Students should consult the Baccalaureate Degree Requirements section of Academic Policies for information concerning the literacy requirement, English composition requirement, catalog requirements, residence requirements, and academic requirements.

Students enrolling in evening classes exclusively should note that only one major, general business administration, will be available on a regular basis. The course work required for other majors offered by the School may be offered irregularly.

All students must complete at least 30 semester hours in this degree program following acceptance to the School of Business Administration. Of these 30 semester hours, at least 18 must be in upper-level courses with grades of C or higher within a specific major, and three semester hours must be in the policy course (MGMT 498).

Degree Requirements

The following requirements must be met by all degree applicants:

<table>
<thead>
<tr>
<th>Semester hours</th>
<th>Business Administration Core Courses 39</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accounting (ACCT 201, 202)*</td>
</tr>
<tr>
<td></td>
<td>Applied Statistical Analysis (DESC 200, 202)*</td>
</tr>
<tr>
<td></td>
<td>Computer-Based MIS (IRM 201)*</td>
</tr>
<tr>
<td></td>
<td>Decision Models (DESC 301)</td>
</tr>
<tr>
<td></td>
<td>Business Legal Studies (BULE 301, 401)</td>
</tr>
<tr>
<td></td>
<td>Finance (FNAN 301)</td>
</tr>
<tr>
<td></td>
<td>Management (MGMT 301)</td>
</tr>
<tr>
<td></td>
<td>Marketing (MKTG 301, 407)</td>
</tr>
<tr>
<td></td>
<td>Business Strategy and Policy (MGMT 498)</td>
</tr>
</tbody>
</table>

(Must be taken at George Mason University.)

<table>
<thead>
<tr>
<th>Semester hours</th>
<th>Major 18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Must be taken at George Mason University. Grades of C or higher required in each course presented on the graduation application.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester hours</th>
<th>Language Arts and Culture 18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English Composition (ENGL 100 or 101 and 302)*</td>
</tr>
<tr>
<td></td>
<td>Speech Communication (COMM 100, 101, or 130)</td>
</tr>
<tr>
<td></td>
<td>Literature and Humanities (Humanities include DANC 101, 391; MUSI 101, 105, 106, 107; THR 101, 351, 352, 353, 356, 357; any art history; any philosophy; any religious studies; or any foreign language</td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
Acceptance to the School of Business Administration is competitive. A composite score is computed by adding the grade point average on the courses above with the applicant's cumulative grade point average on all collegiate work attempted, notwithstanding the age or transferability of that course work. While a straight A average yields a composite score of 8.00, generally a composite score of 5.20 or better is necessary to be competitive for acceptance to the School of Business Administration. Students who receive an academic warning for the semester of application may be denied acceptance, regardless of their overall academic performance.

Applications for acceptance to the School of Business Administration must be submitted by 1 October for the following spring semester, by 1 February for the following summer session, or by 1 July for the following fall semester. You should file the application in the semester at the end of which you anticipate completing the requirements set forth above.

Please note that you must complete a minimum of 30 hours of course work applicable to the degree program following acceptance to the School of Business Administration. Of the 30 hours, 18 must be in upper-level business administration courses (with grades of C or better) required for a specific major, and 3 must be in MGMT 498, Business Strategy and Policy. The business administration core classes other than MGMT 498 (i.e. BULE 301, 401; DESC 301; FNAN 301; MGMT 301, MKTG 301, 407) and the upper-level economics degree requirements may be completed prior to acceptance to the School of Business Administration.

PAGE

Students enrolled at George Mason University may fulfill their general education requirement through the Plan for Alternative General Education (PAGE). PAGE students pursuing degrees in the School of Business Administration should follow the PAGE program approved by the School.

Sample schedule for PAGE Student, Pre-Business Administration Major:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 120</td>
<td>PAGE 125</td>
</tr>
<tr>
<td>PAGE 122</td>
<td>PAGE 123</td>
</tr>
<tr>
<td>PAGE 130</td>
<td>PAGE 131</td>
</tr>
<tr>
<td>PAGE 150/151</td>
<td>PAGE 152/153</td>
</tr>
<tr>
<td>ECON 103</td>
<td>ECON 104</td>
</tr>
<tr>
<td></td>
<td>DESC 200</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 227</td>
<td>PAGE 228</td>
</tr>
<tr>
<td>PAGE 230</td>
<td>PAGE 252</td>
</tr>
<tr>
<td>PAGE 250/251</td>
<td>PAGE 253</td>
</tr>
<tr>
<td>PAGE 225</td>
<td>DESC 202</td>
</tr>
<tr>
<td>ACCT 201*</td>
<td>ACCT 202*</td>
</tr>
<tr>
<td>IRM 201*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

|                |                 |
|                | 16              |

*ACCT 201, ACCT 202, and IRM 201 are generally offered during summer session and might be taken in the summer following semester two or the summer following semester four to reduce the course load in semester 3.
Sample Schedules

Sample schedules for pre-business administration students and students accepted to the School of Business Administration are shown below. Courses need not be taken in the precise sequence or semesters indicated, except as prerequisites or other necessities prescribe.

Sample Schedule for First Four Semesters in Pre-Business Administration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 103*</td>
<td>ECON 104*</td>
</tr>
<tr>
<td>ENGL 101*</td>
<td>DESC 200*</td>
</tr>
<tr>
<td>CS 161</td>
<td>Literature</td>
</tr>
<tr>
<td>MATH 108*</td>
<td>Philosophy or</td>
</tr>
<tr>
<td>Humanities</td>
<td></td>
</tr>
<tr>
<td>Psychology,</td>
<td>3</td>
</tr>
<tr>
<td>sociology, or</td>
<td>3</td>
</tr>
<tr>
<td>anthropology (2</td>
<td>3</td>
</tr>
<tr>
<td>req., in any order)</td>
<td>3</td>
</tr>
</tbody>
</table>

16 15

Third Semester

<table>
<thead>
<tr>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201*</td>
</tr>
<tr>
<td>DESC 202*</td>
</tr>
<tr>
<td>IRM 201*</td>
</tr>
<tr>
<td>COMM 100, 101, or 130</td>
</tr>
<tr>
<td>Laboratory Science</td>
</tr>
</tbody>
</table>

16 16

*Completion with a grade of C or better required before or during the semester of application for acceptance to the School of Business Administration.

Sample Schedule for Students Accepted to the School

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULE 301</td>
<td>FNAN 301</td>
</tr>
<tr>
<td>DESC 301</td>
<td>BULE 401</td>
</tr>
<tr>
<td>MGMT 301</td>
<td>Area of concentration</td>
</tr>
<tr>
<td>MKTG 301</td>
<td>(C or higher req.)</td>
</tr>
<tr>
<td>ECON (upper-level)</td>
<td>Electives*</td>
</tr>
</tbody>
</table>

15 15

Seventh Semester

<table>
<thead>
<tr>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of concentration</td>
</tr>
<tr>
<td>(C or higher req.)</td>
</tr>
<tr>
<td>MKTG 407</td>
</tr>
<tr>
<td>Electives*</td>
</tr>
</tbody>
</table>

15 14

*Pure activity courses may not be taken for general elective credit.
Decision Sciences

Faculty

Professors: K. Kendall, Render (Chair), Ruth

Associate Professor: Gulledge

Assistant Professors: Carlson, Das, Gardner, J. Kendall, Pugh, Warkentin, Young

Instructor: Schank

Lecturers: Mohamed, Parent, Richardson, Stein, Trigiero, Wang

The objective of the Decision Sciences Department is to provide students with a high-quality education in decision sciences and information resource management. The Decision Sciences Department offers a variety of programs and courses that deal with the application of the contemporary technologies of quantitative models and computer information systems to practical problems of both business and governmental organizations. The department also is responsible for undergraduate core courses in information systems, statistics, and quantitative analysis.

Graduates of the program receive a B.S. degree with a major in decision sciences. Students choose one of two areas of concentration — quantitative methods or information resource management. Within the quantitative methods concentration one of three tracks (management science, operations management, or applied statistics) may be pursued. As the names indicate, each track emphasizes a different aspect of quantitative methods. In addition to the general degree requirements for the B.S. degree, students who major in decision sciences must complete 18 hours in upper-level business administration courses with grades of C or higher in each course within their selected area of concentration, as shown below. Students should discuss their choice of concentration with a faculty adviser in the Decision Sciences Department and refer to the official department guidelines for the concentrations and tracks.

Concentration in Quantitative Methods. Required: DESC 352, 353, and 452. Electives: Each student elects one of the following tracks within the concentration in quantitative methods. Courses marked by an asterisk are strongly recommended as track electives. Management science track courses: Three or more from DESC 355*, 451*, 354, 435, and MKTG 351. Operations management track courses: Three or more from DESC 355*, 456* (or STAT 570), DESC 320, 341, 354, 461, 435, 463, and one of either ACCT 311 or MKTG 310 or MKTG 330. Applied statistics track courses: Three or more from DESC 456 (or STAT 570), DESC 354 (or STAT 381), STAT 363, 382, 455, DESC 459.


Notes:
1. Signed Graduate Course for Undergraduate Credit Form must be submitted to take STAT 570, or other graduate-level courses.

2. Because INFS 310 is prerequisite to several INFS courses, students concentrating in information resource management should try to take INFS 310 in their fifth semester.
Finance

Faculty

Professor: Ferri (Chair)
Associate Professors: Crawford, Crockett, Hanweck, Hysom, Johnston, Reuben
Assistant Professor: Sugrue
Instructor: Erickson
Lecturers: Allen, Freund, Kane, Moore

The objective of the Finance Department is to provide students with a high-quality education in finance. The finance faculty offers a major in finance which is designed to prepare students for professional careers in various branches of finance. In addition to the general degree requirements for the major, students wishing to major in finance must complete 18 hours in upper-level business administration courses with grades of C or better in each course.

Required courses: FNAN 311, 321, 401.
Electives: Three or more from ACCT 351, DESC 353, FNAN 351, 411, 412, 421, 423, 440, 451, 452, 491.

Students wishing to enter the investments area are encouraged to elect FNAN 411, 412, 440, and 451. Those wishing to specialize in financial institutions should take FNAN 421, 423, 440, and 451. Those interested in careers in real estate and urban development should take FNAN 351, 451, 452, and 453.

General Business Administration

The faculty of the School of Business Administration, with the associate dean for academic programs, offers a major in general business administration. The objective of this program is to provide students with a high-quality education in business administration. In addition to the general degree requirements for the B.S. degree, students must complete 18 hours of upper-level business administration courses with grades of C or higher in each course shown below. Students may not use the major in business administration if credit for more than one major is desired.

Required: ACCT 311, DESC 352, FNAN 401, MGMT 311, MKTG 471. Electives: One or more upper-level, noncore courses offered by the School of Business Administration.
Management

Faculty

Professors: English, Kovach, Pearce (Chair), Sands (Emeritus Professor), Steinhauer (Emeritus Professor)
Associate Professor: Zahra
Assistant Professors: Cohen, Erdener, Fagenson, Hogan, Patrick, Robbins
Visiting Assistant Professors: Bolce, Hartman

The objective of the Management Department is to provide students with a high-quality education in management. The management major is designed to prepare students for managerial careers in the public and private sectors. In addition to general degree requirements for the B.S. degree, students must complete 18 hours in upper-level management courses with grades of C or higher in each course. Beyond Management 301, students are required to take the following three courses:

MGMT 311 Organizational Behavior
MGMT 321 Personnel Administration
MGMT 491 Seminar in Management

Beyond these three required courses, students must choose three courses from the following:

MGMT 331 Labor-Management Relations
MGMT 341 Business Communication
MGMT 381 Management Problem Solving and Decision Making
MGMT 411 Organizational Theory
MGMT 421 Advanced Personnel Administration
MGMT 431 Labor Legislation and Collective Bargaining
MGMT 451 Small Business Management
MGMT 471 Organizational Management and Environmental Change

Students interested in the human resource/personnel area should take MGMT 331, 421, and 431. Those interested in the entrepreneurship/small business management area should take MGMT 451 plus two other MGMT courses, such as 381 and 411.

Marketing

Faculty

Professors: DeBoer (Emeritus Dean), Kernan (George Mason University Foundation Chair of Behavioral Analysis), McCrohan (Chair), Tongren
Associate Professors: Enrickin, Domzal
Assistant Professors: Harvey, Wongtada
Instructor: Rishell
Lecturers: Hoelzel, Hood, B. Jones, Mason

The objective of the Marketing Department is to provide students with a high-quality education in marketing. The marketing major is designed to prepare students for careers in marketing and related fields. In addition to general degree requirements for the B.S. degree, students must complete 18 hours in upper-level marketing courses with grades of C or higher in each course. Beyond Marketing 301, students will be required to take the following courses:

MKTG 312 Consumer Behavior
MKTG 313 Advertising Management
MKTG 351 Marketing Research Techniques and Applications
MKTG 471 Marketing Management

In addition, students must select two courses from the following:

MKTG 310 Business and Government Logistics
MKTG 311 Sales Management
MKTG 330 Purchasing Materials and Management
MKTG 332 Retail Management
MKTG 333 Industrial and Governmental Marketing
MKTG 451 Marketing Information Systems
MKTG 481 Marketing in the Non-Profit Sector
MKTG 491 Seminar in Marketing
School of Information Technology and Engineering
School of Information Technology and Engineering

Computer Science
Electrical and Computer Engineering
Information Systems and Systems Engineering
Operations Research and Applied Statistics

Problem solving is a process inherent in almost all human activities. It involves finding and implementing a course of action that is intended to accomplish some desirable objectives, such as achieving career goals, operating an office or manufacturing facility, or realizing a set of planning objectives for a public or private sector organization.

People have been involved in problem-solving activities for thousands of years. The industrial revolution and the emergence of the traditional engineering disciplines enabled us to use physical mechanisms as aids in accomplishing many problem-solving activities. Much of traditional engineering activity has been concerned with the physical and material sciences and the use of these sciences to design devices and systems for the presumed betterment of the human condition. Today, we can augment and enhance this success using information technology, the purpose of which is system design for human interaction through enhanced efficiency and effectiveness of knowledge organization and use.

The programs in electrical and computer engineering and computer science are involved with the hardware and software aspects of information technology, and are especially concerned with the "internal" aspects of system design and operation. These concern such efforts as the design of communication, control, and computer systems that enable large volumes of data to be sent at high speeds, transmission of facsimiles of engineering designs, automation of manufacturing facilities and office environments, and provision of the appropriate data bases and physical displays of knowledge that assist in tasks that range from judgmental to physically controlling automated facilities. They are, therefore, concerned with the hardware and software realizations of design specifications within phases of a system life cycle.

But neither hardware alone, nor even software and hardware together, can provide a complete basis for contemporary education in information technology and engineering. The human element is also important for successful system design and operation and must, therefore, be an important ingredient in a successful information technology program. The program in information systems and systems engineering is concerned with working with people to assist them in the organization of knowledge. It is, therefore, concerned with the "external" aspects of system design and operation throughout all phases of a system life cycle.

Information technology and engineering efforts at George Mason University are primarily concerned with four study areas as represented by the four departments in this school: Computer Science, Electrical and Computer Engineering, Information Systems and Systems Engineering, and Operations Research and Applied Statistics. The careful integration of these efforts at GMU results in a unique academic experience for highly motivated students interested in these areas of study.

Careers in these fields are among the most dynamic and rapidly changing within our society, and the people employed as professionals within these information technology and engineering areas perform highly skilled functions that provide significant challenges. Engineers and computer scientists must design systems that will solve their clients' problems. These systems must then be manufactured, installed, maintained, and modified or transitioned to meet evolving needs.

More than 60 percent of the American population is now employed in activities that involve the processing and handling of information. Manufacturing employment has slipped below 20 percent of the employed population, and farming below 5 percent. Moreover, the percentage of people employed in various information technology and information engineering areas is expected to grow. There is hardly a field, from banking to medicine to command and control of military troops and equipment, that is not experiencing explosive growth relative to the feel need for more effective and efficient use of information. The rapid changes in these areas, and the great diversity of potential applications, requires a broad educational background, dedication, and the willingness and desire to continue a lifetime of learning new technology.

The School of Information Technology and Engineering offers eight programs that concentrate on the important contemporary issues and needs just described. Three bachelor's degree programs are offered through the School of Information Technology and Engineering: Computer Science, Electronics Engineering, Systems Engineering.

Five master's degree programs are available: Computer Science, Computer and Electronics Engineering, Information Systems.
Operations Research and Management Science
Systems Engineering

A single cross-disciplinary doctoral program is offered:
Information Technology

The undergraduate degree programs are designed to prepare graduates to enter directly into professional employment or to continue studies at the graduate level. The requirements for the bachelor’s degrees include required and elective courses in mathematics, humanities, and general education, and specialty courses in computer science, electronics engineering, and systems engineering. Each program strongly emphasizes English composition and communication.

Students also have the opportunity, within the elective freedom provided by these undergraduate major programs of study, to develop interest areas in other fields within the School of Information Technology and Engineering that offer undergraduate courses but do not now have undergraduate majors. The Bachelor of Individualized Study (B.I.S.) degree program may be attractive to mature students who have completed a substantial portion of their studies at other institutions.

The following general requirements for a bachelor of science degree must be completed by all undergraduate students who receive bachelor’s degrees through majors in the School of Information Technology and Engineering:
1. Completion of at least 120 semester hours of academic work
2. Completion of at least 12 semester hours of English composition and literature
3. Completion of at least 6 semester hours in the humanities and liberal studies areas of anthropology, economics, geography, government, history, linguistics, philosophy, psychology, and sociology
4. Completion of the requirements for the major as listed under the curricula for computer science or electrical and computer engineering or systems engineering
5. Completion of an acceptable plan of study formulated by the student and his or her adviser.

Students should consult the Baccalaureate Degree Requirements section under Academic Policies in this catalog for detailed information concerning graduation requirements, curricula requirements, English composition and literature requirements, residence requirements, and academic quality requirements for graduation with a major in computer science, electronics engineering, or systems engineering. The portion of the catalog that concerns the Division of Continuing Education discusses the requirements for the B.I.S. degree. The following sections provide a detailed description of the requirements for the computer science, electronics engineering, and systems engineering undergraduate degree programs.

Administration
Andrew P. Sage, Dean
James D. Palmer, Associate Dean

Computer Science

Faculty
Professors: Michalski, Rine (Chair), Seidman, Sood, Wechsler
Associate Professors: DeJong, Hamburger, Norris, Rice
Assistant Professors: Acquah, Bottegal, Diz-Herrera, Eckart, Gonzalez, Herath, Kjell, Onyuksel, Qu, Quammen, Wang

Course Work

Undergraduate degree work in computer science provides students with essential background for the study of information processes and digital computer systems. The program emphasizes both fundamentals and applications. Basic undergraduate areas of study include programming languages, data structures, analysis of algorithms, operating systems, artificial intelligence, and software engineering.

This department offers all course work designated CS in the Course Descriptions section of this catalog.

Admission to Computer Science

Because of the demand for instruction in computer science and the difficulty of the subject matter, offers of admission to major in computer science are extended only to well-qualified students.

Transfer Students and Change of Major. Students transferring from another institution and GMU students desiring to change their major to computer science are expected to have completed at least one semester of analytic geometry and calculus (MATH 113) with a minimum grade of B, and have an overall GPA of 2.75. A student who does not meet this requirement will be advised to enroll in MATH 113 or an appropriate calculus course and reapply for change of major toward the end of the semester. A demonstration of A or B work will be required before the committee approves the change of major.

Advanced Placement. The CS Department recognizes AP Computer Science scores of 3, 4, or 5, which can be used for credit toward CS 112, CS 211, CS 312, as appropriate.

Grades. A student must earn a C or better in any course intended to satisfy a prerequisite for a CS course.

International Students. In addition to the preceding requirements, students whose native language is not English must present TOEFL scores of at least 570 to be admitted to the major.

http://catalog.gmu.edu
Enrollment in computer science courses CS 112, 211, and 312 is generally reserved for students with the prerequisite mathematics background described in each course.

**B.S. Degree with a Major in Computer Science.** In addition to the general SITE degree requirements for a B.S. degree, the following courses are required:

- Computer Science: CS 112, 211, 312, 365, 468, 483, plus 12 additional hours of courses numbered above 300 for a total of 31 hours in computer science;
- Mathematics: MATH 113, 114, 213, 303, 305, 446, for a total of 20 hours in mathematics; MATH 351 or STAT 344; ECE 301.

Students are also required to complete an additional 12 hours of computer science-related courses. These courses may be chosen from the following: OR 435; ECE 285, 431, 442, 511, 512; PHIL 371, 376, 422; any MATH course numbered above 300 except MATH 350, 371, 372; any computer science course numbered above 300.

**Sample Schedule for PAGE Student, Computer Science Major**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 120</td>
<td>MATH 113*</td>
</tr>
<tr>
<td>PAGE 122</td>
<td>PAGE 123</td>
</tr>
<tr>
<td>PAGE 130</td>
<td>PAGE 131</td>
</tr>
<tr>
<td>PAGE 150/151</td>
<td>PAGE 152/153</td>
</tr>
<tr>
<td>CS 112</td>
<td>CS 211</td>
</tr>
</tbody>
</table>

16

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 227</td>
<td>PAGE 228</td>
</tr>
<tr>
<td>PAGE 230</td>
<td>PAGE 252</td>
</tr>
<tr>
<td>PAGE 250/251</td>
<td>PAGE 253</td>
</tr>
<tr>
<td>MATH 114*</td>
<td>MATH 213</td>
</tr>
<tr>
<td>CS 312</td>
<td>CS 311</td>
</tr>
</tbody>
</table>

16

*Substitution allowed for PAGE 125, 225 (Quantitative Analysis I and II).
Electrical and Computer Engineering

Faculty

Professors: Cook, Gertler, Tabak

Associate Professors: Beale, Black (Chair), Capetanakis, Ceperley, Chang, Cooley, Gokhale, Hintz, Kruppa, Mouchahoir, Schaefer, Stephanou

Assistant Professors: Auletta, Baraniecki, Berry, Bourbakis, Cole, Earp, Eldeib, Mulpuri

Lecturers: Athale, Bellem, Berkowitz, Chian, Cserveniansky, Dunham, Edwards, Grafton, Gurfein, Mehrotra, Smith, Stewart, Toms

Degree Requirements

B.S. Degree in Electronics Engineering. This program is designed to prepare the graduate either for direct entry into a career in engineering at the B.S. level or for graduate study. It is accredited by the Accreditation Board for Engineering and Technology.

In addition to the general B.S. degree requirements, the electronics engineering course requirements are outlined in the following program curriculum. Students may complete the requirements on a part-time or co-op basis. In either case, the program must be approved by an academic adviser.

The electronics engineering curriculum is a demanding one that requires more total credit hours than most majors. Students should seriously consider an extra semester or two to accomplish any of the following objectives:
1. Lighten the course load (particularly for those with part-time employment);
2. Participate in cooperative education or work-study (with local industry);
3. Have a double major (with possibly physics, math, or computer science).

The department also offers a master's degree in computer and electronics engineering and participates in the Ph.D. program in information technology through the School of Information Technology and Engineering (see Graduate Catalog).

Other Engineering Disciplines. Students interested in engineering disciplines other than electronics engineering and systems engineering may complete the first two years of course work, which are designed to meet most of the basic requirements of a standard engineering curriculum. Students completing the first two years of study may expect to complete a bachelor of science degree in any of the specialized areas offered at other schools of engineering.

Advising. All engineering students are required to see their major adviser prior to course registration each semester. Students interested in engineering who are not declared majors are also strongly urged to see an electronics engineering adviser each semester.

Required Courses in a Sample Schedule for B.S. in Electronics Engineering

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 113</td>
<td>MATH 114</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>CS 211</td>
</tr>
<tr>
<td>CS 112</td>
<td>PHYS 250</td>
</tr>
<tr>
<td>ECE 107</td>
<td>ENGL 101</td>
</tr>
<tr>
<td>Humanities or social science elective (See dept. for approved electives; at least one at 300-level or above.)</td>
<td>Humanities or social science elective (See dept. for approved electives; at least one at 300-level or above.)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 350</td>
<td>PHYS 352</td>
</tr>
<tr>
<td>PHYS 351</td>
<td>PHYS 353</td>
</tr>
<tr>
<td>MATH 213</td>
<td>MATH 304</td>
</tr>
<tr>
<td>ECE 285</td>
<td>ECE 286</td>
</tr>
<tr>
<td>ENGR 205</td>
<td>ENGR SCI (ENGR Literature)</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 331</td>
<td>ECE 333</td>
</tr>
<tr>
<td>ECE 332</td>
<td>ECE 334</td>
</tr>
<tr>
<td>ECE 305</td>
<td>ECE 360</td>
</tr>
<tr>
<td>MATH 305</td>
<td>ECE 445</td>
</tr>
<tr>
<td>MATH 303</td>
<td>STAT 344 or</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>MATH 351</td>
</tr>
<tr>
<td>Humanities or social science elective (See dept. for approved electives; at least one at 300-level or above.)</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 421</td>
<td>ECE 491</td>
</tr>
<tr>
<td>ECE 433</td>
<td>ECE Advanced</td>
</tr>
<tr>
<td>ENGR 390</td>
<td>lab (ECE 429, 434, 435, 449, 461)</td>
</tr>
<tr>
<td>ECE 460</td>
<td>ECE Technical electives*</td>
</tr>
<tr>
<td>ECE Advanced lab (ECE 429, 434, 435, 449, 461)</td>
<td>ECE 490</td>
</tr>
<tr>
<td>ECE 431</td>
<td>Humanities or social science elective (See dept. for approved electives; at least one at 300-level or above.)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

*See department for approved technical electives.

Tracks in electronics, communications and signal processing, computer engineering, and controls systems and robotics are available. A nontrack option is also available.
Information Systems and Systems Engineering

Faculty

Professors: Androle, Aseltine, Beam, Fairley, Gomaa, Kerschberg, Kornreich, Palmer, Sage, Sibley

Associate Professors: Adelman, Goicoechea, Hopple, Lehner, Siff

Assistant Professor: DasGupta

Systems engineering involves the application of scientific and engineering efforts to transform an operational need into a description of a system and a system configuration. Systems engineers implement an iterative process of problem definition, concept synthesis, systems design, testing and evaluation.

Systems engineering activities vary from requirements definition or specification to the conceptual and functional design and development of systems. They concern architectural definition and performance evaluation, which are needed to obtain functional integration, maintainability, reliability, and, perhaps most important, the appropriate interfaces that will ensure system design for successful human interaction. This human interaction may involve human supervisory control of physical processes, such as the robots that are used in automated manufacturing. It may involve typically cognitive tasks at the operational levels of fault diagnosis, detection, and correction; or at the level of strategic planning.

Systems engineering at George Mason University primarily focuses on the design, development, and use of systems and processes that support human activities in planning, design, decision making, and associated resource allocation. Our undergraduate program in systems engineering thus has strong information systems components. It emphasizes behavioral factors associated with such subjects as human-machine interaction, the design of decision support and expert systems, software systems engineering, and system acquisition and procurement. These compose the advanced portion of undergraduate study and follow such fundamental subjects as applied mathematics, engineering science, and computing.

The systems engineering curriculum is thus interdisciplinary, drawing upon knowledge and information from the social, behavioral, computer, mathematical, management, and engineering sciences. While generic, the systems engineering curriculum at George Mason University is intended to prepare students for specific problem solving, systems design, and testing and evaluation in industry, government, or academia.

Course Work

The undergraduate degree program in systems engineering is offered through this department, and courses with designators INFS (Information Systems) and SYST (Systems Engineering) are generally its responsibility.

Degree Requirements

B.S. Degree in Systems Engineering. The degree program in systems engineering is designed to prepare the undergraduate for direct entry into professional practice or for entry into graduate study. In addition to the general degree requirements of GMU, students must meet specific requirements for this degree, which are outlined in the accompanying sample schedule.

Advising. All systems engineering students are required to see their advisers at least once each semester to plan for the following semester's registration. This is a minimum requirement because close contact can assure maximum benefits from the many available educational opportunities at GMU. Each student in systems engineering is expected to complete an approved plan of study which then constitutes a "learning contract" for the degree program.

Sample Schedule for Undergraduate Systems Engineering Majors

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>MATH 113</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENGL 101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS 112</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 103</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Second Semester</td>
<td>MATH 114</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 104</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS 211</td>
<td>3</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td>MATH 213</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 350</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 351</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ECE 285</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS 312</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Fifth Semester</td>
<td>INFS 311</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SYST 301</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>STAT 344</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OR 441</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGR 206</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Sixth Semester</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Seventh Semester</td>
<td>SYST 451</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SYST 490</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Engr Sci Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Technical Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

The 6 hours of engineering science electives may be selected from general engineering (ENGR) or electrical and computer engineering (ECE) courses. Technical electives may be selected from courses in computer science, electrical and computer engineering, information systems, systems engineering, or approved courses in operations research, applied statistics, psychology, or business administration.
Operations Research and Applied Statistics

Faculty

Professors: Greenberg, Harris, Schum, Wegman

Associate Professors: Gantz, Hoffman, Miller, Nash

Assistant Professors: Richey, Sofer, Sutton

Operations research and applied statistics at George Mason University principally involve the theoretical and empirical sciences of managerial and operational processes. These processes are typically described by mathematical models that are derived from empirical observations, or from a theory that is subject to empirical validation. Our courses include but go beyond the traditions of mathematical programming and supporting mathematical methods to enable broad consideration of managerial and operational problems.

A major objective of the program is to allow a better understanding of natural phenomena, such as traffic in a network or customers arriving at a bank, and designed processes which have a deliberate structure, such as manufacturing production lines or administrative procedures in an office. Model-based support systems are particularly valuable to organizations in strategic and tactical situations and for developing short- and long-range plans.

Models are needed for a variety of purposes in business, industry, and government to describe different environments and to relate alternative courses of action to performance. Thus, the courses in operations research and applied statistics focus on the modeling and analysis of systems. While we do not offer an undergraduate degree in either operations research or statistics, a variety of appropriate courses are available for inclusion in other degree programs.

Course Work.

This department generally offers courses in this catalog that carry the OR (Operations Research) or STAT (Statistics) prefixes.
School of Nursing
School of Nursing

The undergraduate nursing program at George Mason University is designed to prepare students to deliver superior nursing care and provide leadership in nursing in the increasingly complex and challenging field of modern health care. Graduates are in demand as professional nurses in hospitals, nursing homes, community health agencies, and other health care agencies. The program emphasizes early detection of potential health problems, health maintenance in ambulatory services, and preparation for the managerial responsibilities of nurses.

Professional degree programs such as nursing are built upon a strong general education base. Nursing theories and technologies taught utilize this background and prepare students to function in a variety of health care agencies.

PAGE

The general education requirements within the B.S.N. program may be met through George Mason University’s Plan for Alternative General Education (PAGE). The plan integrates the University’s general education requirements in the form of a series of interdisciplinary courses that are completed during the first two years of a bachelor degree program. For nursing students, the PAGE option satisfies all requirements except the course work in nursing and biology.

Administration

Rita M. Carty, Dean
Brenda S. Cherry, Associate Dean for Academic Programs
Georgine M. Redmond, Assistant Dean, Student Affairs

The undergraduate nursing program at George Mason University is accredited by the Virginia State Board of Nursing and by the National League for Nursing.

Course Work

This School offers all course work designated NURS in the Course Descriptions section of this catalog.

Bachelor of Science Degree

The Bachelor of Science in Nursing (B.S.N.) degree prepares graduates to function as professional nurses in hospitals, nursing homes, and in the community. The program may be completed on a full- or part-time basis, and a special accelerated pathway for registered nurses takes into account the needs of the working R.N. An accelerated pathway for students with baccalaureate degrees outside of nursing is also offered. All pathways lead to completion of the objectives of the undergraduate program.

Clinical nursing begins at the sophomore level. Students must complete a prenursing curriculum and be admitted to junior standing or to one of the accelerated pathways.

Degree Requirements

Candidates for the degree must present at least 124 semester hours of work. Specific requirements for the B.S.N. are as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts and Culture</td>
<td>15</td>
</tr>
<tr>
<td>English (ENGL 101, 302)</td>
<td>6</td>
</tr>
<tr>
<td>Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities</td>
<td>6</td>
</tr>
<tr>
<td>Art (appreciation, history, criticism, or theory)</td>
<td></td>
</tr>
<tr>
<td>Music (appreciation, history, criticism, or theory)</td>
<td></td>
</tr>
<tr>
<td>Literature (in addition to six hours of ENGL 101, 302)</td>
<td></td>
</tr>
<tr>
<td>Philosophy, language, religion, or humanities</td>
<td></td>
</tr>
<tr>
<td>Social Behavior Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>20</td>
</tr>
<tr>
<td>Chemistry (CHEM 103-104)</td>
<td>8</td>
</tr>
<tr>
<td>Biology (BIOL 124-125)</td>
<td>8</td>
</tr>
<tr>
<td>Microbiology (BIOL 261)</td>
<td>4</td>
</tr>
<tr>
<td>Statistics (STAT 250, PSYC 300, or SOC 221)</td>
<td>3-4</td>
</tr>
<tr>
<td>Nursing Major</td>
<td>46-62</td>
</tr>
<tr>
<td>Physical Education Activities (recommended)</td>
<td>2</td>
</tr>
</tbody>
</table>

Electives

(No more than three hours of nursing electives may be used to satisfy this requirement.)

Total

124

The school provides opportunity for credit by examination in several courses for students presenting evidence of previous training. Registered nurses may...
obtain a maximum of 30 hours of credit toward the baccalaureate degree by satisfactory performance on proficiency examinations. Programs of study are planned based on student needs.

**Special Requirements**

Nursing students are required to obtain annual health examinations and immunizations beginning with registration for their first clinical course. They are also responsible for their own uniforms and transportation. Student liability insurance is provided by the University. A sophomore student must have CPR certification before entering Nursing 262 and maintain it through the remainder of the program.

Because knowledge, skills, and behavior patterns in the major field of this program are so vital to the health and perhaps even the survival of individuals or groups being served, failure or borderline achievement cannot be tolerated. Therefore, the faculty of the School of Nursing has established, with approval of University faculty and administration, the following special major field quality standards which go beyond the general University quality standards printed elsewhere in this catalog:

**Acceptance into Junior Standing in Nursing.**

Acceptance into junior standing in nursing is based on a cumulative average of 2.8 in courses prerequisite to junior-level nursing courses: anatomy and physiology; chemistry; microbiology; psychology (three hours); sociology; Nursing 250, 254, 262. Students must achieve C or better in prerequisite courses. Students not accepted for junior standing in nursing may re-petition and, if they meet the criteria, may be admitted on a space-available basis.

Students enrolled in the Program for Alternative General Education must earn a C or better in PAGE 130, 131, 227, and 228. In addition, PAGE students must earn a 2.8 prerequisite cumulative average in the following courses: BIOL 124, 125, and 261, NURS 250, 254, and 262.

Permission to register for NURS 301, 302, 314, 315, 324, and 326 requires prior acceptance into junior standing in nursing. Application must be made during the semester in which the student will be completing the prerequisites for the junior-level courses.

Application for acceptance into junior standing in nursing for the fall semester must be made prior to March 15; for the spring semester, prior to November 15.

All prerequisite courses and credit by examination must be successfully completed before recommendations are made to accept the student into junior standing. These recommendations are made at the end of the semester when all courses are completed and grades have been reported. Students who have not successfully completed credit by examination or course work by the end of the spring semester cannot be guaranteed clinical placement in junior-level courses in the following fall. The registered nurse student takes ACT-PEP exams for junior standing.

Full-time nursing requires carrying a heavy schedule; therefore, outside obligations should be limited to ensure success.

**Additional Academic Grade Standards**

**Progression.** A final nursing course grade of less than C prohibits further progress in the sequence of required nursing courses until that course is repeated and a satisfactory grade is earned.

A nursing course in which a grade of less than C is earned may be repeated once. Upon earning a grade of C or better the student may resume progress in the sequence of required courses.

Failure to earn a grade of C or better in a course being repeated, or earning a grade of less than C in a second nursing school course, results in suspension of eligibility to progress in the sequence of required nursing courses.

A student so suspended may, after the subsequent academic period (fall semester, spring semester, or summer session), petition the Director of the Undergraduate Program for permission to repeat the nursing course (or courses, if two grades of less than C were earned in the same semester) that resulted in the suspension.

No more than two nursing courses may be repeated. Failure to produce a satisfactory grade of C or better in the trial course(s) or in any later nursing course results in exclusion from the University's nursing program.

**Graduation.** Graduation depends upon earning a C or better in all courses prerequisite for junior standing and all required nursing courses.

**Faculty**

**Professors:** Ailinger, Carty (Dean), Johnson-Brown (Visiting Commonwealth Professor), Silva, Walker

**Associate Professors:** Cherry (Director, Undergraduate Program), Connelly (Associate Dean, Graduate Program), Feeg, Griffith, Harper, Lambert, Liu, Milliong, Moore, Shannon, Smith, Trainor, Vail

**Adjunct Associate Professor:** Johnson

**Assistant Professors:** Boland, Brenkus, Cianci, Conti, Coviello, Dinnemann, Ehkle, Fant, Fisher, Gaffney, Jenkins, Kodadek, Kramer, Langley, Ott, Redmond (Assistant Dean), Roberts, Rudowski, Tackett, Wiederhorn, Williams

**Adjunct Assistant Professors:** Bednash, Kopac, Neill

**Lecturers:** Anderson, Bouboulis, Boyd, Davister, DeFreytas, Dwyer, Evers, Garvasini, Hassmiller, Merritt, Murphy, Rice, Rigney, Rosetti
College of Education and Human Servi...
College of Education and Human Services

Curriculum and Instruction

Educational Leadership and Human Development
Health, Sport, and Leisure Studies
Social Work

The College of Education and Human Services, dedicated to preparing scholars and practitioners in the fields of human services, occupies a unique position within the University community. Students come to the College from diverse backgrounds and are encouraged to seek excellence through programs of study which have become increasingly multidisciplinary in order to respond to the richness and complexity of a pluralistic society. In addition to providing the framework for the integration and application of knowledge from a variety of disciplines, the curricula of the College provide the opportunity for students to examine, evaluate, and practice professional knowledge, skills, and techniques. Since there are many ways in which human service endeavors may respond to individual and group needs, the function of the faculty goes beyond imparting knowledge to include engaging students in critical thinking, research, analysis, and problem-solving activities. The curricula and the faculty both contribute to the college goal of preparing students to make sound professional judgments and personal contributions to the world in which they live.

Course Work

The College of Education and Human Services enrolls students preparing for specific professions and is composed of four departments offering course work in the following disciplines shown in this catalog and the catalog of the Graduate School:

- Department of Curriculum and Instruction: EDCI, EDRD, EDSE, EDUC;
- Department of Educational Leadership and Human Development: EDAS, EDGC;
- Department of Health, Sport, and Leisure Studies: HEAL, PHED, PRLS;
- Department of Social Work: SOCW;
- College of Education and Human Services: DAED.

PAGE

Students enrolled at George Mason University may fulfill their general education requirements through the Plan for Alternative General Education (PAGE). PAGE students pursuing degrees in the College of Education and Human Services should follow the PAGE program approved by each department in the College.
Curriculum and Instruction

Faculty

Professors: Beyer, Bindel, Bowen, Gilstrap (Chair), Martin, Montebello

Associate Professors: Bonfadini, Carroll, Chu, Duck, Dzama, Given, Isenberg, Jacob, Raines, Sears, Smith

Assistant Professors: Behrmann, Burger (research), Collier, Jones, Nuttall (acting), Valero-Figueira, White

Instructor: Burnham (clinical)

PAGE Students

Students in the early and middle education programs may fulfill some of their general education requirements through the PAGE program. Additional courses in general education, however, are necessary to meet degree requirements. Students should contact the PAGE adviser in the Department of Curriculum and Instruction for the list of additional general education courses.

Available Teacher Education Programs

The teacher education programs are designed to prepare students who are qualified academically and professionally and who possess the personal attributes needed for success in the teaching profession. Teacher education programs serve undergraduates in the College of Education and Human Services and in the Bachelor of Music degree program, and post-baccalaureate students through the Graduate School.

The following teacher preparation programs are available:

1. Early Education — Nursery School, Kindergarten through Grade 4 (NK-4)
2. Middle Education — Grades 4 through 8 (4-8)
3. Secondary Education — Grades 8 through 12 (Consult graduate catalog for description of the post-baccalaureate certification program in secondary education and the additional requirements to earn an M.Ed.)
4. Special Certification (Music Education, K-12; Health Education, 8-12; and Physical Education, K-12)
5. Technology Education
   a. Technology Education Specialty
   b. Trade and Industrial Education Specialty
   c. Business Education Specialty

The early education, middle education, secondary education, and special certification programs are approved by the Virginia State Department of Education, the National Association of State Directors of Teacher Education and Certification, and the National Council for Accreditation of Teacher Education.

Acceptance into the Department of Curriculum and Instruction’s Teacher Education Program

Students interested in pursuing a major in early or middle education must apply for admission to the Teacher Education Program through the Department of Curriculum and Instruction. Until their applications are filed and approved by the Teacher Education Screening Committee (TESC), they are classified as pre-education majors.

Admission to the Teacher Education Program is selective. Students must apply and be accepted into the program before enrolling in any 400-level courses. Application forms and detailed admission policies and procedures are available in the Office of Professional Education Services.

Students who do not meet the prerequisites for admission listed below ordinarily should not apply. However, in extenuating circumstances students who do not meet all the requirements may apply if they submit a statement explaining why they have not met all requirements. Students who are denied admission may appeal that decision in writing to the Coordinator of the Office of Professional Education Services, who will then present that appeal to the TESC in accordance with established policy.

Prerequisites for admission are the following:

Deadlines

Completed and signed application forms must be submitted to the Office of Professional Education Services by January 1, March 15, August 1, or November 1 of the semester preceding that in which the student intends to enroll in 400-level courses.

Academic Requirements

1. Good academic standing in accordance with University policy
2. Completion of a minimum of 60 credit hours, at least 6 of which must have been completed at George Mason
3. A minimum GPA of 2.50 on the most recent 60 credit hours of collegiate-level work
4. A minimum professional GPA of 2.75

To qualify for a professional GPA, the student must have:

a. Completed EDUC 311 and 302
b. Completed a minimum of 12 credit hours selected from EDUC 305, 306, 320, 322, 324, 344, HEAL 305, or PHED 301.
(Note: No grade below C will be accepted for satisfactory completion of course work in the professional sequence. Deficiencies may be remedied in accordance with University 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, math, and computer literacy
3. Completion of a panel interview as scheduled through the Office of Field Experiences

Suitability for Teaching
Demonstrated suitability for teaching as stated in part by Virginia Certification Regulations for Teachers: "...the applicant must be at least 18 years of age and must possess good moral character," and also possess the "physical and mental health necessary for the tasks to be performed."

Retention in the Teacher Education Program for Early and Middle Education Majors
Upon admission to teacher education programs, the student's progress and development as a teacher will be monitored by the Coordinator of the Office of Professional Education Services and the Department of Curriculum and Instruction faculty. Should a student fail to maintain the standards required for entrance to the program, admission status will be revoked until such time as the student presents appropriate evidence to the TESC that these deficiencies have been remedied.

Academic Requirements
Requirements for retention are:
1. Continued academic performance at or above the admission requirement standards;
2. Courses included in the computation of the professional GPA that include courses taken through the Department of Curriculum and Instruction 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 method courses and related field experience activities. When Department of Curriculum and Instruction 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 and be accepted for placement in student teaching.

Students must recognize that the semester prior to student teaching is critical. Academic or performance deficiencies (i.e. incompletes, graduation deficiencies) preclude student teaching.

Requirements for admission to student teaching are:

Deadlines
Filing of applications for student teaching in the Office of Professional Education Services by February 10 for the fall semester and September 10 for the spring semester.

Academic Requirements
1. Continued academic performance at or above the admission and retention standards
2. Completion of all degree requirements, except for student teaching, as determined by the student's graduation catalog
3. No grade below C in any professional sequence course

Suitability for Teaching
Completion of an interview scheduled through the Office of Professional Education Services resulting in a recommendation for admission to student teaching from the Coordinator of the Office of Professional Education Services. In cases of denial, a review will be presented to the TESC for action in accordance with committee policy.

Degree Requirements for B.S.Ed. Degree with a Major in Early Education (NK-4) or Middle Education (4-8)

<table>
<thead>
<tr>
<th>Language Arts</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English and Literature</td>
<td>15</td>
</tr>
<tr>
<td>a. ENGL 101 Composition and Introduction to Literature (3)</td>
<td></td>
</tr>
<tr>
<td>b. ENGL 205, 206 or 253 Readings in English and American Literature (3)</td>
<td></td>
</tr>
<tr>
<td>c. Any other 200-level English literature course (3)</td>
<td></td>
</tr>
<tr>
<td>d. ENGL 302 Advanced Composition (3)</td>
<td></td>
</tr>
</tbody>
</table>

2. Oral Communication
Select one of the following:
1. COMM 100 Introduction to Communication (3)
2. COMM 120 Introduction to Public Speaking (3)

<table>
<thead>
<tr>
<th>Humanities</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Art</td>
<td>6</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>a. ARTH 101 Art Appreciation (3)</td>
<td></td>
</tr>
<tr>
<td>b. ARTS 102 Visual Thinking (3)</td>
<td></td>
</tr>
<tr>
<td>2. Music</td>
<td></td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
<table>
<thead>
<tr>
<th>Social Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. History</td>
<td>12</td>
</tr>
<tr>
<td>a. HIST 121 Formation of the American</td>
<td>6</td>
</tr>
<tr>
<td>Republic (3)</td>
<td></td>
</tr>
<tr>
<td>b. HIST 122 Development of Modern America</td>
<td>3</td>
</tr>
<tr>
<td>2. Geography</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>a. GEOG 101 Major World Regions (3)</td>
<td></td>
</tr>
<tr>
<td>b. GEOG 103 Cultural Geography (3)</td>
<td></td>
</tr>
<tr>
<td>3. Economics</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>a. ECON 103 Contemporary Economic</td>
<td></td>
</tr>
<tr>
<td>Principles and Issues I (3)</td>
<td></td>
</tr>
<tr>
<td>b. ECON 104 Contemporary Economic</td>
<td></td>
</tr>
<tr>
<td>Principles and Issues II (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mathematics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MATH 371 Mathematics in the</td>
<td>12</td>
</tr>
<tr>
<td>Elementary School I</td>
<td></td>
</tr>
<tr>
<td>2. MATH 372 Mathematics in the</td>
<td>3</td>
</tr>
<tr>
<td>Elementary School II</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Laboratory Science</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select three of the following disciplines:</td>
<td>12</td>
</tr>
<tr>
<td>1. BIOL 151 An Introduction to Biology or</td>
<td></td>
</tr>
<tr>
<td>Biology 103 Contemporary Biology (4)</td>
<td></td>
</tr>
<tr>
<td>2. CHEM 103 Chemical Science in Modern</td>
<td></td>
</tr>
<tr>
<td>Society (4)</td>
<td></td>
</tr>
<tr>
<td>3. PHYS 141 Elementary Physics (3) and</td>
<td></td>
</tr>
<tr>
<td>PHYS 142 Elementary Physics Lab (1)</td>
<td></td>
</tr>
<tr>
<td>4. ASTR 105 Introduction to Modern</td>
<td></td>
</tr>
<tr>
<td>Astronomy (4)</td>
<td></td>
</tr>
<tr>
<td>5. GEOL 101 Physical Geology (4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School Health and Physical Education</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HEAL 110 Personal Health</td>
<td>3</td>
</tr>
<tr>
<td>2. HEAL 305 Teaching Health in the</td>
<td>3</td>
</tr>
<tr>
<td>Elementary School</td>
<td></td>
</tr>
<tr>
<td>3. PHED 301 Teaching Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>in the Elementary School</td>
<td></td>
</tr>
<tr>
<td>4. PHED 100 Foundations of Exercise and</td>
<td></td>
</tr>
<tr>
<td>Fitness</td>
<td>1</td>
</tr>
<tr>
<td>5. A one-credit activity course</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specialized Studies</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Consult academic adviser in the Department</td>
<td></td>
</tr>
<tr>
<td>of Curriculum and Instruction for available</td>
<td></td>
</tr>
<tr>
<td>specialized study areas and requirements.</td>
<td></td>
</tr>
<tr>
<td>Areas are available in all disciplines in</td>
<td></td>
</tr>
<tr>
<td>the College of Arts and Sciences.)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Requirements</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Foundations and General Methods</td>
<td>10</td>
</tr>
<tr>
<td>a. EDUC 311 Introduction to Early and</td>
<td></td>
</tr>
<tr>
<td>Middle Education (1)</td>
<td></td>
</tr>
<tr>
<td>b. EDUC 302 Human Growth and Development (3)</td>
<td></td>
</tr>
<tr>
<td>c. EDUC 320 Introduction to Tests and</td>
<td></td>
</tr>
<tr>
<td>Measurements (3)</td>
<td></td>
</tr>
<tr>
<td>d. EDUC 322 Essential Elements for Early</td>
<td></td>
</tr>
<tr>
<td>and Middle Education (2)</td>
<td></td>
</tr>
<tr>
<td>e. EDUC 324 Utilization of Instructional</td>
<td></td>
</tr>
<tr>
<td>Media and Technology (1)</td>
<td></td>
</tr>
<tr>
<td>2. Specialized Methods and Materials</td>
<td>25</td>
</tr>
<tr>
<td>a. EDUC 305 Children's Literature (3)</td>
<td></td>
</tr>
<tr>
<td>b. EDUC 306 Teaching Language Arts in the</td>
<td></td>
</tr>
<tr>
<td>Elementary School (3)</td>
<td></td>
</tr>
<tr>
<td>c. EDUC 344 Problem Solving in School</td>
<td></td>
</tr>
<tr>
<td>Mathematics (3)</td>
<td></td>
</tr>
<tr>
<td>d. EDUC 401 Teaching Thinking Skills (4-8</td>
<td></td>
</tr>
<tr>
<td>students) or EDUC 402 Teaching and</td>
<td></td>
</tr>
<tr>
<td>Learning in Nursery School and</td>
<td></td>
</tr>
<tr>
<td>Kindergarten (NK-4 students) (1)</td>
<td></td>
</tr>
<tr>
<td>e. EDUC 403 or 404 Developmental Reading</td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>f. EDUC 407 or 408 Diagnostic Reading (3)</td>
<td></td>
</tr>
<tr>
<td>g. EDUC 411 Teaching Math in the</td>
<td></td>
</tr>
<tr>
<td>Elementary School (3)</td>
<td></td>
</tr>
<tr>
<td>h. EDUC 412 Teaching Social Studies and</td>
<td></td>
</tr>
<tr>
<td>the Humanities in the Elementary School</td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>i. EDUC 413 Teaching Science in the</td>
<td>15</td>
</tr>
<tr>
<td>Elementary School (3)</td>
<td></td>
</tr>
<tr>
<td>3. Clinical Experiences</td>
<td></td>
</tr>
<tr>
<td>a. EDUC 429 or 430 Junior Student</td>
<td></td>
</tr>
<tr>
<td>Teaching (6)</td>
<td></td>
</tr>
<tr>
<td>b. EDUC 431 or 432 Senior Student</td>
<td></td>
</tr>
<tr>
<td>Teaching (9)</td>
<td></td>
</tr>
</tbody>
</table>

| Total Hours                                 | 130   |

**Certification at Early Education and Middle Education Levels.** Teacher preparation programs in early education (nursery school, kindergarten, grades 1-4) and in middle education (grades 4-8) are offered. Students must decide prior to enrollment in 400-level courses whether they desire to be certified at the early education level or at the middle education level.

All undergraduates seeking dual certification (NK-4 and 4-8) must fulfill the following requirements:
1. The completion of three hours in reading methods at the second level of study.
2. Appropriate student teaching experience at both levels

None of the additional professional course hours for dual certification will count toward the hours needed for graduation.

The programs listed above lead to the awarding of the Bachelor of Science in Education degree with a major in early education or in middle education and eligibility for an initial Virginia certificate with endorsement at the nursery school-kindergarten-grade 4 level, or the grades 4-8 level.

**Bilingual/Multicultural Education.** Specializations in bilingual/multicultural education and/or English as a second language are offered within the early and middle education degree as well as the secondary certification program at the graduate level. Interested students should consult with an adviser in the Bilingual/Multicultural Education Center in the Department of Curriculum and Instruction. Financial aid is available for students bilingual in English and a minority language of the public school population in this metropolitan area.
### Technology Education Program

The technology education program is a cooperative arrangement between the University and Northern Virginia Community College (NVCC). Freshmen may enroll at either institution. Individuals who have completed an A.A.S. degree are accepted into the program with appropriate credit given for general education and technical courses taken at NVCC or other institutions. Some specialized technical laboratory and business courses are taught at NVCC. Students can obtain teacher certification in one of three areas: technology education, trade and industrial education, and business education. The specialties require the completion of at least 123 hours including one semester of student teaching in the senior year. A maximum of 50 percent of the degree requirements may be transferred from a community or junior college.

#### Specialty in Technology Education

Preparation for a technology education teacher requires the completion of prescribed technical and curriculum courses offered at the University. The program leads to the B.S.Ed. degree and a Virginia certificate with endorsement to teach technology education in the public schools, K-12. General, professional, and technical education are the three major components of the specialty.

#### General Education Component

This component consists of 48 required semester hours, 12 in humanities, 12 in social sciences, 12 in math and science, and an additional 8 hours of electives from any of the areas above. Students are required to take at least one math and lab science course. Health 110 and a physical education elective complete this component.

#### Educational Component

This component consists of 28 prescribed semester hours. The required courses are EDUC 308, 463, 467, 469, 302. The remaining 12 hours are completed in EDUC 417 Student Teaching.

#### Technical Component

This component consists of 48 semester hours, 33 required and 15 electives. The required courses are EDUC 364, 365, 366, 367, 370, 371, 372, 373, 374, 377, 386. Elective courses may be taken at NVCC or GMU with the approval of the technology education program coordinator and the dean of the College of Education and Human Services. Students enrolling at GMU should attempt to take GMU technical teaching courses before or concurrently with NVCC technical electives.

#### Sample Schedule for Technology Education Specialty (K-12)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>ENGL 302</td>
</tr>
<tr>
<td>HIST 121</td>
<td>Social Science elec.</td>
</tr>
<tr>
<td>Math</td>
<td>Science</td>
</tr>
<tr>
<td>EDUC 364</td>
<td>Technical elective</td>
</tr>
<tr>
<td>EDUC 370</td>
<td>Technical elective</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong> 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical elective</td>
</tr>
<tr>
<td>EDUC 371</td>
</tr>
<tr>
<td>EDUC 372</td>
</tr>
<tr>
<td>Science elective</td>
</tr>
<tr>
<td>Physical education</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 469</td>
</tr>
<tr>
<td>Technical elective</td>
</tr>
<tr>
<td>EDUC 302</td>
</tr>
<tr>
<td>Humanities elective</td>
</tr>
<tr>
<td>Social studies elec.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 467</td>
</tr>
<tr>
<td>Social studies</td>
</tr>
<tr>
<td>World literature or communication</td>
</tr>
<tr>
<td>HEAL 110</td>
</tr>
<tr>
<td>Humanities elective</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 463</td>
</tr>
<tr>
<td>Social studies</td>
</tr>
<tr>
<td>World literature</td>
</tr>
<tr>
<td>HEAL 110</td>
</tr>
<tr>
<td>Humanities elective</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 366</td>
</tr>
<tr>
<td>EDUC 386</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

#### Specialty in Trade and Industrial Education

This technology education specialty is associated with one specific area of vocational education, for example, auto mechanics, air conditioning/refrigeration, cosmetics, electronics, and building trades. Prospective teachers may complete and transfer NVCC A.A.S. degrees or their equivalent. University credit is given for technical work experience where appropriate. The program leads to the B.S.Ed. degree and a Virginia certificate with endorsement to teach industrial education in the public schools. Practicing industrial education teachers can earn a college degree or meet minimum state certification requirements through this program.

The program requires both course work and appropriate work experience relating to the area of specialization. The University’s coordinator of technology education evaluates prospective candidates' work experience and transcripts and recommends approval for University credit where applicable. General, professional, and technical education are the three major components of the specialty.

#### General Education Component

Same as technology education.

#### Professional Education Component

Includes all courses in the technology education component with the addition of EDUC 320 and 485. EDUC 439 Internship in Vocational Education may be necessary to meet the occupational experience requirement.

#### Technical Component

Requires A.A.S. degree or equivalent, in addition to GMU courses EDUC 373 and 374.

---

[http://catalog.gmu.edu](http://catalog.gmu.edu)
Sample Schedule for Trade and Industrial Education Specialty

Freshman and sophomore years: Obtain A.A.S. degree or equivalent (maximum transfer hours from community college: 60 semester hours)

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 463</td>
<td>EDUC 467</td>
</tr>
<tr>
<td>EDUC 312</td>
<td>EDUC 373</td>
</tr>
<tr>
<td>EDUC 320</td>
<td>EDUC 374</td>
</tr>
<tr>
<td>EDUC 469</td>
<td>EDUC 308</td>
</tr>
<tr>
<td>General elective</td>
<td>General elective</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 465</td>
<td>EDUC 417</td>
</tr>
<tr>
<td>Vocational elective</td>
<td>6</td>
</tr>
<tr>
<td>Math-science elective</td>
<td>3</td>
</tr>
<tr>
<td>HEAL 110</td>
<td>Physic Education</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Summers
General elective 3
Math-science elective 3
6

Specialty in Business Education

This technology education program specialization contains course work which meets the state teachers certification requirements for business education teachers at the secondary level. Technical courses and business courses may be obtained at NVCC. Secretarial science A.A.S. degrees contain appropriate transfer credits. Courses in business administration may also meet some degree requirements. General, professional, and technical are the three major components of the program.

General Education Component. Same as technology education with the requirement of ECON 103 and 104 as two specific social science courses.

Professional Component. This component consists of 34 semester hours of course work. The specific courses are EDUC 308, 302, 320, 463, 465, 467, 469. Student teaching, EDUC 417, completes the remaining 12 hours of this component.

Technical Component. Business education technical component leads to three possible areas of teacher certification: business education-general office procedures (36 hours), business education-stenography (39 hours), business education-data processing (42 hours). The specific course work areas that compose the business education certification specialties are accounting (6 hours), business principles and management (12 hours), office technology (9 hours), typewriting and shorthand (3-12 hours), and data processing (12 hours). EDUC 364, 373, and 530 are required courses that may contribute to the certification requirements. The technology education coordinator will determine appropriate course work and transfer credit for each specialty.

Sample Schedule for Business Education Specialty

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>ENGL 302</td>
</tr>
<tr>
<td>HIST 121 or 122</td>
<td>ECON 103</td>
</tr>
<tr>
<td>Math</td>
<td>Science</td>
</tr>
<tr>
<td>Business</td>
<td>Social science</td>
</tr>
<tr>
<td>Business</td>
<td>Humanities</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 104</td>
<td>Speech</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
</tr>
<tr>
<td>General Ed. elective</td>
<td>3</td>
</tr>
<tr>
<td>General Ed. elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 469</td>
<td>EDUC 467</td>
</tr>
<tr>
<td>EDUC 364</td>
<td>EDUC 373</td>
</tr>
<tr>
<td>EDUC 320</td>
<td>Physical Education</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 463</td>
<td>EDUC 417</td>
</tr>
<tr>
<td>EDUC 302</td>
<td></td>
</tr>
<tr>
<td>EDUC 465</td>
<td>Business</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Summers
Business 3
Business 3
6

Certification for Secondary School Teaching

The Secondary School Teacher Education Program has three components:

1. Courses in the teaching discipline as developed by the College of Arts and Sciences and the College of Education and Human Services. CAS majors include biology chemistry, economics, English, French, German, geography, geology, government, history, mathematics, music, physics, psychology, sociology, and Spanish. Added secondary endorsement certification is offered in prealgebra, earth science, and general science. In addition, a specialization in bilingual/multicultural education is offered. Interested students should consult an adviser in the Bilingual/Multicultural Education office. Students who major in music should consult the Department of Performing Arts. Students with majors in health education or physical education should consult the Department of Health, Sport, and Leisure Studies. Students majoring in technology education should consult the coordinator of technology education.
2. General Education Requirements as mandated by the State of Virginia:

<table>
<thead>
<tr>
<th>Humanities</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101, 102 (or 302 — may only be taken by students who have completed literature requirements and 45 hours)</td>
<td>6</td>
</tr>
<tr>
<td>English, foreign language, oral communication, fine arts, music, or philosophy</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Sciences</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 121 or 122 Anthropology, economics (required for all social science endorsements), geography, history, political science, psychology, or sociology</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Laboratory Science and Mathematics</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>(At least one course in each area)</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives (from the above categories)</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Physical Education</td>
<td>5</td>
</tr>
<tr>
<td>HEAL 110 Physical Education activities (credit for these courses may not be applied toward a degree in the College of Arts and Sciences)</td>
<td>2</td>
</tr>
</tbody>
</table>

3. The Professional Courses required by the Department of Curriculum and Instruction:

Students who wish to be certified in a secondary school discipline must complete the graduate-level 30-hour certification program in education listed below. They must also complete the general education and discipline courses they need to meet state certification requirements. These courses may either be undergraduate or graduate courses. In addition, students must have an approved plan of study course work needed for certification and be fully admitted to the Teacher Education Program in accordance with the regulations stated in the Graduate Catalog.

**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 529 Pluralism in US Education (2)

4. EDUC 531 Educational Tests and Measurements (3)

5. EDUC 593 Utilization of Instructional Technology (3)

6. 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

7. Practicum
Health, Sport, and Leisure Studies

Faculty

Professors: Cooper, Ruhling (Chair), Stein
Associate Professors: Bever, Crawford, Metcalf, Schack
Research Associate Professor: Bunker
Adjunct Assistant Professor: Doyle
Assistant Professors: Cato, Linn, Wright
Lecturers: Godin, Reynolds
Research Instructor: Procaccino

Course Work

The department offers all course work designated HEAL, PHED, and PRLS in the Course Descriptions of this catalog.

PAGE Students

General education requirements are satisfied by successful completion of the Program for Alternative General Education (PAGE). Additional courses are required each semester the student is enrolled in the PAGE program. Students planning to major in health education; physical education; or parks, recreation, and leisure studies should contact the Department of Health, Sport, and Leisure Studies for the list of courses.

Physical Education

Degree Requirements

This degree is designed to prepare students for physical education careers in teaching public and private sector fitness and sport programs, and advanced study in exercise and sports sciences. Course work consists of a general education required core, a 24-semester-hour specialization in a supporting discipline, and three options for concentration of the major courses in a professional sequence. With the exception of student teaching (options II, III), the specialization courses must be selected with approval of the adviser from a discipline outside physical education; 15 of these hours must be in 300/400-level courses and the 24 hours must be exclusive of the general education requirements. The final semester is devoted to student teaching or an internship. Students must have a 2.50 or higher GPA in the major and the

specialization course work.

The semester prior to enrolling in student teaching or the internship, all majors must pass the physical proficiency examination. Students enrolled in the teacher certification program must also demonstrate proficiency in swimming or enroll in and pass an intermediate-level swimming course, and must complete a proficiency examination in writing before applying for graduation. See the Department of Curriculum and Instruction to register for the examination

Physical Education Program

Core

<table>
<thead>
<tr>
<th>Course Work</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts and Culture</td>
<td>21</td>
</tr>
<tr>
<td>English</td>
<td>6</td>
</tr>
<tr>
<td>ENGL 101, 102 (or 302)</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100 or 120</td>
<td>3</td>
</tr>
<tr>
<td>Non-Western Culture: ANTH 114, 201, 204, 206, 207, 208, 211, 313, 332</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 180, 280, 319, 320</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 432, 433, 434</td>
<td>3</td>
</tr>
<tr>
<td>FREN 451</td>
<td>3</td>
</tr>
<tr>
<td>GOVT 332, 333</td>
<td>3</td>
</tr>
<tr>
<td>KORE 450</td>
<td>3</td>
</tr>
<tr>
<td>KORE 450</td>
<td>3</td>
</tr>
<tr>
<td>LAC 152, 153, 154</td>
<td>3</td>
</tr>
<tr>
<td>MUSI 103</td>
<td>3</td>
</tr>
<tr>
<td>RELI 211, 212, 213, 314, 315, 337, 490</td>
<td>3</td>
</tr>
<tr>
<td>RUSS 353, 354</td>
<td>3</td>
</tr>
<tr>
<td>THR 327, 356, 357</td>
<td>3</td>
</tr>
<tr>
<td>VIET 301, 302</td>
<td>3</td>
</tr>
</tbody>
</table>

An equivalent number of hours in a foreign language may be used to meet this requirement.

Literature (200 level) | 6 |

Humanities: | 3 |

Art, music, theatre, or philosophy (except logic) | 3 |

Behavioral and Social Sciences | 12 |

HIST 121 or 122 | 3 |

Select 9 hours from the following:

Anthropology, economics, geography, government, history, sociology, psychology (Must be from 3 different fields) | 9 |

Required Courses

<table>
<thead>
<tr>
<th>Course Work</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 124-125 (8), MATH (3)</td>
<td>19</td>
</tr>
<tr>
<td>HEAL 110 (3), 111 (2), 205 (3)</td>
<td>19</td>
</tr>
</tbody>
</table>

Total | 52 |

Option I Physical Education with Selected Specialization

Core | 52 |

Professional Sequence

PHED 105 (physical education majors do not have to take PHED 100 as a prerequisite or corequisite), 165, 300, 303, 304, 308, 311 (register for PHED 442 [1 hour] and attend tennis portion of PHED 311, [fall only]), 317 (register for PHED 442 [1 hour] and attend tennis portion of PHED 317
weight training portion of PHED 317 [spring only]), 330, 450, 490
PRLS 316, EDUC 302, any 300/400-level
course of 3 hours from Department of
Health, Sport, and Leisure Studies

Specialization
Students may select a specialization from
areas such as management, marketing, sport
psychology, or exercise science.

Contracts specifying specialization courses
must be completed and approved by adviser
and intern coordinator no later than the end
of the first semester in the program.

Total Hours 122

Option II Physical Education

Core 52

Teacher Certification, K-12

Professional Sequence 50

PHED 106 (physical education majors do not
have to take PHED 100 as a prerequisite or
corequisite), 206, 300, 303, 304, 306, 308,
311, 312, 315, 317, 318, 330, 365, 371, 403,
450, 460, PRLS 316

Methods: 21

EDUC 311, 302, 322 (or 522), PHED 415

Total Hours 123

Option III Teacher Certification in Physical
Education with Endorsement in Health Education

Core 52

Professional Sequence 61

PHED 106 (physical education majors do not
have to take PHED 100 as a prerequisite or
corequisite), 206, 300, 303, 304, 306, 308,
311, 315, 317, 330, 365, 371, 403, 450, 460
HEAL 315, 440, and three of the following
courses: 220, 310, 325, 330
PRLS 316

Methods: 21

EDUC 311, 302, 322 (or 522) PHED 415

Total Hours 134

Physical Proficiency Examination

All students majoring in physical education must pass
all three parts of the examination to be eligible for the
B.S. degree. The following are the requirements:

Men
Sit & Reach: 10-second hold at toe level
Flexed Arm Hang: 30 seconds
1 1/2 Mile Run: 12 minutes or less

Women
Sit & Reach: 10-second hold at toe level
Flexed Arm Hang: 20 seconds
1 1/2 Mile Run: 13:30 or less

Swimming Proficiency Examination

All students enrolled in the teacher certification
program must pass the following swimming proficiency
test or enroll in and pass an intermediate-level
swimming course:

1. Swim 50 yards/meters using either freestyle or
breast stroke
2. Swim 50 yards/meters using two strokes (25
yards/meters each) different from the first 50 yards
(excluding elementary back stroke)
3. Swim 20 feet under water

Certification in Athletic Training

Certification in Athletic Training by the National Athletic
Training Association (NATA) may be obtained by
meeting the following educational requirements:

1. A college degree with teaching certification

2. Completion of the following
NATA requirements:
   a. Anatomy and physiology
   b. Physiology of exercise
   c. Applied anatomy and
kinesiology
   d. Psychology (two courses)
   e. First aid and CPR
   f. Nutrition
   g. Remedial exercise
   h. Personal, community, and
school health
   i. Techniques of athletic training
   j. Advanced techniques of athletic
   training
   k. Clinical Experience — 1800 clock
   hours of on-the-job training

GMU Course

Equivalent

BIOL 124-125

PHED 450

PHED 300

PSYC (6 hrs.)

HEAL 111

HEAL 330

PHED 308

HEAL 110, 120

PHED 330

PHED 331

by arrangement

with a certi-

fied athletic

trainer over a

period of at

least 2 years

Recommendations
1. Acting team physician
2. NATA supervising athletic trainer

Examination. Students must pass written and
practical tests administered by NATA and apply for
certification.

Note: Requirements are subject to change and
students must meet current NATA certification stan-
dards.

Teacher Education Program

The program in teacher education is accredited and
approved by the National Council for Accreditation of
Teacher Education and the Virginia State Department
of Education. Admission is granted by the Teacher
Education Screening Committee. Students should
obtain an application form from the office of the
coordinator of Professional Education Services and
apply to the Teacher Education Program during or upon
completion of the fall semester of their junior year. To
be considered for admission, students must:

1. Have completed or be in the process of completing

http://catalog.gmu.edu
Health, Sport, and Leisure Studies

Health Education

Degree Requirements

This degree is designed to prepare students for health education careers in teaching, community health agencies, public and private sector health promotion programs, and advanced study in health education. Course work consists of a general education required core, 15 semester hours in a support discipline, and three options for concentration of major courses in a professional sequence. Support disciplines include sociology, psychology, communications, marketing, science, education, and physical education. (Note exceptions in options II and III.) Courses in the support discipline must be exclusive of general education requirements with at least nine semester hours at the 300/400 level.

The final semester of the program is devoted to student teaching and/or internship. Students selecting a teacher certification option must meet requirements set forth under the Teacher Education Program section preceding the health education degree program description. Students planning to pursue this degree program must present a 2.00 or higher GPA in health education courses completed prior to applying for admission to the program. Applications to major in this program should be submitted to the Department of Health, Sport, and Leisure Studies upon completion of 45 semester hours (must include personal health and community health courses).

Programs in Health Education

Core Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts and Culture</td>
<td>15</td>
</tr>
<tr>
<td>ENGL 101 and 102; COMM 100 or 130</td>
<td>9</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 203, 204, 205, or 206</td>
<td></td>
</tr>
<tr>
<td>Humanities (art, music, philosophy,</td>
<td>3</td>
</tr>
<tr>
<td>foreign language, or economics; must</td>
<td></td>
</tr>
<tr>
<td>substitute ECON 103 or 104 if support</td>
<td></td>
</tr>
<tr>
<td>discipline is marketing (option III)</td>
<td></td>
</tr>
<tr>
<td>Behavioral and Social Sciences</td>
<td>12</td>
</tr>
<tr>
<td>PSYC 100; SOCI 101; HIST 121 or 122; ANTH 114</td>
<td></td>
</tr>
<tr>
<td>Mathematics and Natural Science</td>
<td>23-28</td>
</tr>
<tr>
<td>BIOL 103-104 or 113-114, 124-125, 261; STAT 250</td>
<td></td>
</tr>
<tr>
<td>(students in option II who choose STAT 250 must</td>
<td></td>
</tr>
<tr>
<td>take 5 credits of PHED 100 level) or SOCI 221;</td>
<td></td>
</tr>
<tr>
<td>CHEM 211 (options II and III)</td>
<td></td>
</tr>
<tr>
<td>Required Courses</td>
<td>9</td>
</tr>
<tr>
<td>HEAL 110, 111</td>
<td>5</td>
</tr>
<tr>
<td>PHED 100 level (students in option II who</td>
<td>4</td>
</tr>
<tr>
<td>choose STAT 250 must take 5 credits of</td>
<td></td>
</tr>
<tr>
<td>PHED 100 level)</td>
<td></td>
</tr>
<tr>
<td>Core Total (depending on option)</td>
<td>59-64</td>
</tr>
<tr>
<td>Option I — Community Health</td>
<td></td>
</tr>
<tr>
<td>Core</td>
<td>59-60</td>
</tr>
<tr>
<td>Professional Sequence</td>
<td>48</td>
</tr>
<tr>
<td>HEAL 120, 205, 220, 310, 315, 323, 325,</td>
<td></td>
</tr>
</tbody>
</table>

60 semester hours, 6 of which must have been taken at the University, before applying.

2. Have a GPA of 2.50 for the most recently completed 60 hours of collegiate work and for the professional GPA.

3. For the professional GPA the student must have completed or be in the process of completing:

For Physical Education (Options II and III)

a. EDUC 311, 302, and 322, BIOL 124 and 125, PHED 300 and 303.
b. Two of the following: PHED 311, 312, 315, 317, 318.

For Health Education (Options II and III)

a. BIOL 103-104 or 113-114, HEAL 110, 120, 205, 315, 320, 325, 330.
b. One of the following four courses: HEAL 220, 310, 325, 330.

4. Have submitted the departmental checklist of requirements from the catalog year in which the student entered the University. This may be obtained from the coordinator of Professional Education Services or the Department of Health, Sport, and Leisure Studies.

5. Have demonstrated proficiency in written and oral communication and computer literacy. (See the Department of Curriculum and Instruction to register for the examinations.)

6. Physical education students must take the Common Examination and Physical Education Area Examination, and health education students must submit scores for the General Knowledge and Communication Skills components of the National Teachers Exam (NTE) that meet the minimum standards for teacher certification in Virginia in effect at the time of test administration.

7. Have completed a panel interview as scheduled through the Office of Professional Education Services.

8. Students may not enroll in 400-level courses until they have been admitted to the Teacher Education Program.

Student Teaching Admission

1. Students must maintain a GPA of 2.50 or above following admission to the Teacher Education Program.

2. Students must complete the application process for student teaching through the Office of Professional Education Services.

3. Students must have satisfactorily completed both physical and swimming proficiency tests.

Internship Admission

1. Students must have a current approved program contract.

2. Students must have completed and obtained approval for an internship application during the semester prior to that of the internship. (Get appropriate forms from department secretary.)

3. Students must have satisfactorily completed the physical proficiency test.
330, 430, 440, 450, 460

Support Discipline
(Students may select a support discipline from areas such as communication, education, marketing, physical education, psychology, sciences, or sociology; consult an academic adviser in the Department of Health, Sport and Leisure Studies.)

Minimum Total Required
15

Degree Requirements
Program for B.S. degree with a Major in Parks, Recreation, and Leisure Studies

General Education
Semester Hours
Language arts and culture
12
ENGL 101, 102 (or 302) (6); COMM 120 or 130 (3); (Art, music, theatre, literature, foreign language, philosophy, religion) (3)
Science
11
BIOL 103, 104 (8); IRM 201 or CS 103 (3)
Behavioral Science
9
PSYC 100 (3)
Social Sciences (GEOG, ANTH, PSYC, SOCI, GOVT or HIST) (6)
HEAL 110 or 205 (3)

Professional Interest Option (Second year)
16
(Select one option only)

Park Resource Option
Emphasis in science (biology, chemistry, geology) and technology courses. Consult with adviser.

Recreation Service Option
Emphasis on social and behavioral sciences with skill development in physical, social, or cultural arts. Consult with adviser.

Commercial Recreation Option
Emphasis on social science, human resources management, and marketing for private recreation and tourism. Consult with adviser.

Management Core
15
ACCT 201, ECON 103, MGMT 301, 311, MKTG 301

Professional Program
50
PRLS 100, 103, 210, 310, 315, 320, 400, 405, 410, 415, 425, 450, 460, 490

Electives
6
Total
122

Professional Interest Options
Each option consists of 16 credits. Select any listed courses. Note number of hours required. Any changes must be made with adviser's written permission.

Park Resources
Emphasis in science (biology, chemistry, geology) or related park resources courses.

6 hours from the following:
BIOL 307 Ecology
BIOL 309 Intro to Ocean
BIOL 333 Vertebrate Zoology
BIOL 345 Plant Communities
BIOL 371 Animal Distributions
CHEM 103 Chemical Science in Modern World
GEOG 110 Maps and Map Reading
GEOG 280 Geography of Virginia
GEOG 303 Conservation of Resources & Environ.
GEOG 315 Geog of U.S. & Canada
GEOG 412 Aerial Photography
GEOG 430 Land Use Geography
GEOL 103 Geol of National Parks
GEOL 106 Environmental Geology

3 hours from the following:
GOVT 103 Intro to Dem Govt
GOVT 241 Intro to Pub Ad
ANTH 120 Intro to Archaeology

7 hours from the following:
MKTG 333 Industrial & Govt Marketing
PRLS 316 Recreation & Outdoor Education
PRLS 300 People with Nature
PRLS 326 Seminar: Practical Problem Solving in Recreation and Parks
PRLS Recreation Activities (choose two)

Recreational Services

Emphasis on social and behavioral sciences with skill development in physical, social, or cultural arts.

6 hours from the following:
HEAL 111 Adv First Aid & Emer Care
HEAL 205 Prin of Accident Causation & Prevention
HEAL 330 Nutrition
PHED 304 Sport Culture & Society
PHED 308 Developmental PE
PHED 450 Physiology of Exercise
PHED 300 Kinesiology

3 hours from the following:
PSYC 321 Counseling Psychology
PSYC 231 Social Psychology
SOCI 397 Fundamentals of Aging I
SOCI 398 Fundamentals of Aging II
PSYC 415 Psych Factors in Aging
SOCI 203 Socio of Small Groups
SOCI 205 Socio of Deviance
SOCI 240 Soc Services of Society
SOCI 302 Socio of Delinquency

7 hours from the following:
Music, Art, Drama
Dance, Crafts, PHED
PRLS 326 Current Issues in Parks and Recreation
PRLS Recreation Activities (choose two)

Commercial Recreation

Emphasis on marketing, business skills, health, fitness and human resources management for managing leisure services for profit and consumer satisfaction.

6 hours from the following:
IRM 410 Managerial Applications of Microcomputers
MGMT 321 Personnel Administration
MGMT 361 Management Problem Solving and Decision Making
MGMT 451 Small Business Management
MKTG 311 Sales Management
MKTG 312 Consumer Behavior
MKTG 313 Advertising Management
COMM 330 Prin of Public Relations
FNAN 301 Financial Management

7 hours from the following:
HEAL 111 Adv First Aid & Emer Care
HEAL 205 Principles of Accident Causation & Prevention
HEAL 330 Nutrition
PHED 300 Kinesiology
PHED 430 Prevent/Care of Ath Injuries
PHED 450 Physiology of Exercise
NURS 480 Health Maintenance & Health Aspects of Aging
PRLS Recreation Activities (choose two)

3 hours from the following:
PSYC 230 Industrial Psychology
PSYC 415 Psych Factors in Aging
SOCI 203 Sociology of Small Groups
SOCI 205 Sociology of Deviance
EDUC 302 Human Growth & Development
Social Work

Faculty

Associate Professors: Hughes, Polivka (Chair), Raskin

Assistant Professors: Davis, Gary

Course Work

This department offers all course work designated SOCW in the Course Descriptions section of this catalog.

B.S. Degree with a Major in Social Work. To receive a bachelor of science with a major in social work, the student must successfully complete requirements for the bachelor of science degree, including:

1. Forty-one to 45 semester hours in social work, to include SOCW 301, 323, 324, 351, 352, 357, 358, 453, 454 or 455, 471, and two 400- or 500-level social work electives;

2. SOCW 101 and 221 or PSYC 300, PSYC 100, and either SOCW 305 or PSYC 231;

3. Six semester hours in each of the following: English composition; English literature; philosophy/reigion; and the social sciences (history/economics/government), to include GOVT 204;

4. BIOL 103, 104;

5. Three semester hours in mathematics;

6. Three semester hours in economics;

7. Additional semester hours to total 120 hours.

To be admitted to the social work program, a student must:

1. Have completed at least 45 credits with a GPA of 2.5;

2. Have achieved at least a C in each of the following: SOCW 301, including a satisfactory evaluation of field experience, and SOCW 351;

3. Have submitted application for social work major to the director of Social Work Admissions. Sophomores should file this application between January 1 and March 15, juniors between September 1 and November 1. The student's application for admission to the social work major will be reviewed by social work faculty members for action. A personal interview may be required.

The social work program is designed to prepare the student for beginning generalist professional practice in social work and has been granted full accreditation by the Council on Social Work Education. The faculty has the responsibility to evaluate the student's performance periodically and the right to require a student to withdraw from the program when in its judgment performance is not satisfactory. The decision will be based on the quality of academic and field performance as well as on personal fitness for the profession of social work. The student has the right to appeal.

Sample Schedule for B.S. Degree with a Major in Social Work

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Elective 3</td>
</tr>
<tr>
<td>Psyc 100</td>
<td>MATH (106) 3</td>
</tr>
<tr>
<td>History or</td>
<td>GOVT 204 3</td>
</tr>
<tr>
<td>government</td>
<td>(recommended)</td>
</tr>
<tr>
<td>Philosophy or</td>
<td>Philosophy or 3</td>
</tr>
<tr>
<td>religion</td>
<td></td>
</tr>
<tr>
<td>SOCI 101</td>
<td>Elective 3</td>
</tr>
<tr>
<td></td>
<td>SOCW 100 (optional) (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Fourth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English or American Literature</td>
<td>PSYC 231 or</td>
</tr>
<tr>
<td>BIOL 103</td>
<td>SOCI 203 3</td>
</tr>
<tr>
<td>SOCW 300</td>
<td>English or American 3</td>
</tr>
<tr>
<td>Economics</td>
<td>Literature 3</td>
</tr>
<tr>
<td>Elective</td>
<td>BIOL 104 4</td>
</tr>
<tr>
<td></td>
<td>Elective 3</td>
</tr>
<tr>
<td></td>
<td>Elective 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Semester</th>
<th>Sixth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 357*</td>
<td>SOCW 352 3</td>
</tr>
<tr>
<td>SOCW 323*</td>
<td>SOCW 358 4</td>
</tr>
<tr>
<td>SOCW 301</td>
<td>SOCW 324 3</td>
</tr>
<tr>
<td>SOCW 351*</td>
<td>Elective 3</td>
</tr>
<tr>
<td>ENGL 302</td>
<td>Elective 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Semester</th>
<th>Eighth Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCW 453**</td>
<td>SOCW 454** 5</td>
</tr>
<tr>
<td>Social work elective</td>
<td>Social work elective 3</td>
</tr>
<tr>
<td>SOCI 221</td>
<td>SOCW 471 3</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective 3</td>
</tr>
</tbody>
</table>

* The social work program can be completed in the final four semesters. Students who must do so are advised to take the courses with asterisks in their fifth (fall) semester. Otherwise, their graduation will be delayed.

** Students who wish to register for Block Placement (SOCW 455, 10 credits) must meet specific requirements and be advised by the director of field instruction.
Division of Continuing Education
George Mason University's commitment to continuing education was formalized in 1973 when the Office of Extended Studies was created. Its purpose was to develop and administer a continuing education program for the community. To serve more Northern Virginia citizens, the Office of Extended Studies started two significant and unique continuing education activities in 1974: the extended studies enrollment procedure and off-campus credit courses. These activities began with 500 students and now serve more than 5,000.

The Extended Studies office initiated the University's first noncredit courses and reorganized the undergraduate evening session to accommodate the part-time, working, adult student. In 1975, the University began the Bachelor of Individualized Study (B.I.S.) degree program and initiated the awarding of Continuing Education Units (CEUs) to participants in organized community service workshops, conferences, and institutes.

In response to the continuing education needs of health professionals, the Office of Extended Studies and the Department of Nursing began a cooperative Nursing Continuing Education Program in 1977. Later, a similar cooperative In-Service Education program began with the Department of Education.

In the fall of 1978, President George W. Johnson announced the upgrading of the status of the University's continuing education service from the Office of Extended Studies to the Division of Continuing Education, effective January 1, 1979. This change recognized the maturing of George Mason University and the essential place in its offerings for adults who turn to their regional university for educational renewal. The step emphasized the University's determination to provide an extensive lifelong learning program to the community.

**Programs and Services**

The Division of Continuing Education provides the Northern Virginia community with a comprehensive program of learning opportunities: the nontraditional Bachelor of Individualized Study degree program; undergraduate evening programs; the nursing continuing education program; in-service education; the extended studies enrollment procedure; off-campus credit instruction; contract courses; undergraduate guest matriculant enrollment; senior citizen enrollment; community services; and noncredit courses. The Division also administers a nontraditional master's program under the Graduate School. Academic programs offered through the Division of Continuing Education originate in the appropriate colleges and schools of the University and are subject to official University regulations and procedures. The dean of the Division of Continuing Education serves as the academic dean of all students enrolled in programs administered by the Division.

**Administration**

Robert T. Hawkes, Jr., Dean
Sally J. Reithlingshoefer, Associate Director

**Extended Studies**

The extended studies enrollment procedure serves the academic counseling and career information needs of adult learners and provides an opportunity for qualified students to apply for enrollment in courses without being formally admitted to the University. The program accommodates the diverse continuing education needs of students for achieving personal enrichment, upgrading skills, retraining for new jobs, increasing the enjoyment of retirement or leisure time, entering or reentering the job market, exploring new areas of study, or making up prerequisites to qualify for entry into a degree program. While meeting these needs, students earn credit that can be later applied to a degree program.

Extended studies enrollment is based on evaluative criteria and availability of space in course selections. Enrollment in high-demand fields may be restricted or prohibited from time to time.

**Enrollment Procedures.** Prior to each semester, professional academic counselors assist more than 3,000 students in selecting courses appropriate to their career goals. They also advise students about requirements for courses and programs, approve course selections, explain registration procedures, and acquaint students with the University services available to Extended Studies enrollees. All academic policies and procedures apply to Extended Studies enrollees. Completed courses, earned credits, and grades are recorded on regular University transcripts.

Counseling appointments are available to all new extended studies students and are required of all returning students who have earned 15 or more semester hours of credit as extended studies students at GMU. Counseling appointments are optional for all other returning extended studies students who have taken courses at some time during the past two years, have transcripts on file, and have earned 14 or fewer semester hours of credit at GMU.
Counseling and enrollment services are available to the public throughout the entire year in the Division of Continuing Education. During nonregistration times, career and academic counseling services are available on a walk-in basis and appointments are not needed. During presemester registration periods, counseling services are limited to course approval only, and appointments are required. Interested students should call the Division for appointments and office hours.

**Enrollment Requirements.** Prospective enrollees are required to supply unofficial evidence of their academic background along with the enrollment request packet to the Division of Continuing Education. High school transcripts and evidence of graduation are required of those who have no previous college course work. Transcripts, grade reports, diplomas, or certification documents are required of those who have had previous academic work.

Extended studies enrollees are expected to achieve satisfactory grades, i.e., a semester average of at least C (2.00), in all undergraduate courses and at least B (3.00) in all graduate courses. Students who do not meet these criteria during two consecutive periods of enrollment are not permitted to register again as extended studies enrollees.

If an extended studies enrollee later applies for admission to a GMU degree program, any unsatisfactory grades earned while enrolled through extended studies will remain a part of the student's permanent record and will be counted in determining the student's future academic standing.

**Credits Applicable to a Degree Program.** If an extended studies enrollee wishes to apply for admission to a degree program, the regular graduate or undergraduate admissions procedures take effect, almost as if the student were applying for transfer. Extended studies enrollees may apply for formal admission at any time. The Office of Admissions applies the same criteria for admission of these students as for students transferring from other institutions.

If accepted for admission into a degree program and if the courses taken meet the current catalog requirements of the degree program, students may apply up to 60 hours earned as extended studies enrollees toward an undergraduate degree. A maximum of 12 hours of graduate credit earned through extended studies enrollment may be applied toward a master's degree program if the student applies for admission to the Graduate School and is accepted into a degree program. It is the responsibility of the student, after admission to the Graduate School and upon initial registration as a degree student, to initiate a request for applying credit earned through extended studies enrollment to the appropriate graduate degree program.

If the student has transferable credit from another institution, the amount of applicable credit earned through extended studies enrollment is reduced accordingly. Grades for the graduate courses taken through extended studies enrollment, if approved toward a master's degree, are included in the student's grade-point average. Prospective degree-seeking students are urged to apply for regular admission as soon as possible or as soon as they are eligible to do so. Candidates for degrees must fulfill the degree requirements outlined in the catalog that is in effect at the time they are admitted.

**Guest Matriculant Enrollment**

Persons enrolled in undergraduate degree programs at other accredited institutions who wish to take undergraduate courses at the University for transfer back to their home institution enroll through the Division of Continuing Education during the fall and spring semesters. Such students should submit transcripts and permission to enroll from the appropriate dean of the home institution to a counselor in the Division of Continuing Education. Only students in good academic standing at their home institution are permitted to enroll as guest matriculants at George Mason.

Guest matriculants enrolled in graduate programs at other accredited institutions should contact the Graduate School to make arrangements for taking graduate courses.

During the summer terms, however, both undergraduate and graduate guest matriculants should contact the Summer Session office to arrange for course work.

**Senior Citizens Enrollment**

The Division of Continuing Education coordinates enrollment under the Senior Citizens Higher Education Act of 1974, as amended and as applicable to the University. Under the terms of this act, eligible Virginia residents over 60 years of age with a taxable income of less than $7,500 are entitled to enroll in courses offered for academic credit on a space-available basis without payment of tuition and fees.

In addition, the Act provides for audit of course(s) offered for academic credit and also for enrollment in noncredit course(s) without payment of tuition and fees on a space-available basis, regardless of the taxable income level. Tuition, however, may be charged for courses designed exclusively for senior citizen groups. No senior citizen may change registration status in any given semester once he or she has initially registered for classes.

**Undergraduate Evening Program**

The Division of Continuing Education coordinates undergraduate courses and programs scheduled after 4:15 p.m. for the undergraduate colleges and schools. Undergraduate degree programs in business administration, communication, economics, English, history, mathematics, philosophy, psychology, and sociology are completely available in the evening. All academic departments offer evening courses.

The dean of the Division administers many academic policies for undergraduate evening students. Evening class schedules are included in the University's Schedule of Classes.
Bachelor of Individualized Study Degree Program (B.I.S.)

The B.I.S. degree program offers mature students an academically sound program that provides an alternative to traditionally structured baccalaureate degrees. It provides each student, guided by a University academic adviser, an opportunity to formulate a course of study that complements individual needs and interests. The choices in any given instance are interinstitutional, individualized, and interdisciplinary.

The B.I.S. degree is conferred by the University in partial fulfillment of its service obligation to Northern Virginians. More than 700 students have been granted B.I.S. degrees since the program was established in 1975. Another 550 students are currently enrolled in the program. The program is administered by the Director of Individualized Study Degree Programs in the Division of Continuing Education, and the dean of the Division is academic dean for all students in the program.

The program recognizes the breadth of an adult student’s background by providing for generous transfer of credits earned at accredited institutions and by providing procedures to translate knowledge gained from prior experiential learning or self-education into academic credits as appropriate.

In acquiring credits toward a B.I.S. degree, a student may proceed at his or her own pace. The program recognizes that not all knowledge is gained in the classroom. It emphasizes the development and evaluation of the student’s ability, not the manner in which the knowledge was acquired. The program is aimed at meeting the varied needs of the mature adult student who may not need or desire the traditional B.S. or B.A. degree, or who is confronted with obstacles barring the pursuit of a more conventional degree.

Eligibility. Applicants to the B.I.S. program must have been out of high school at least eight years and have accumulated at least 30 semester hours of college credit with a minimum grade of C. At least 15 of the initial 30 hours required for admission must have been earned through conventional classroom instruction.

Application and Acceptance. Students who meet the eligibility requirements may fill out an application to the B.I.S. program after an initial counseling session with B.I.S. counselors. Appointments for counseling may be made by calling (703) 323-2342. Application deadlines are January 1, April 1, July 1, and October 1 of each year. Although a student may apply to the B.I.S. program before making application to the University, only students admitted to the University can be accepted into the program. Students are notified of their acceptance or denial by the last day of the month following each deadline. Acceptance into the B.I.S. program is conditional until the student obtains a faculty adviser and a signed educational contract. Although the B.I.S. director and counselors can assist the student in this process, finding a faculty adviser remains the responsibility of the student.

Acceptance decisions are based on the director’s assessment of the individualized, nontraditional nature of the course of study desired by the applicant; the availability of courses relevant to the desired field of study within the Northern Virginia Consortium for Continuing Higher Education; the availability of academic advisers in the field; the GPA of the student and the likelihood of the student benefiting from the proposed course of study. In general, a nontraditional, individualized course of study is defined as one not offered through established academic departments at the University. Denials of admission to the program may be appealed to the Dean, Division of Continuing Education, and to the B.I.S. Advisory Committee.

Reapplication to the B.I.S. Program is required of students who have been inactive for two years or more or who wish to change the content of their individualized course of study.

Program Requirements

The student must complete a minimum of 120 semester hours of course work. At least 45 semester hours must be in upper-level courses (numbered in the 300, 400, and 500 sequences), and at least 30 semester hours must be completed at George Mason University or at other institutions of the Northern Virginia Consortium.

The following minimum general education requirements must be completed: (1) six hours in English Composition/Literature (ENGL 101 (100), 102 or 302; or equivalent); (2) six hours of science or mathematics; (3) six hours of humanities; and (4) six hours of social or behavioral sciences.

In conjunction with a University academic adviser, the student must design and complete an individualized program of course work relevant to his/her nontraditional educational interest. This study core constitutes the student’s “individualized major.” The core must include a minimum of 30 semester hours of credit, at least 12 of which must be upper-level course work. A maximum of six hours of grades of D may be included in the core. A student with 33 hours or less remaining in the degree program is required to obtain a faculty adviser before additional course work is completed.

The student must also complete a final project, the content of which must be related to the individualized study core. This project is undertaken in the last semester of study under the course heading BIS 490. Three credits are given for successful completion of the project (grade of C or better). These credits can be counted toward all program requirements above but they may not be counted toward the 30 hours of the individualized study core. The student’s academic adviser and two other faculty members constitute the evaluation committee for this project. One member of the committee is selected by the faculty adviser and one member is selected by the student. A grade of IP (In Progress) may be given by the adviser, if appropriate, to allow the student additional time to complete the B.I.S. project. The IP grade will be changed to F if the project is not completed by the end of the next fall or spring grading period.

The following are examples of the types of individualized, nontraditional concentrations designed by B.I.S. students in conjunction with faculty advisers:

- American Folk Culture
- Art Therapy
- Aviation Management
- Community Resources Program Development
- Computer Applications to Health Care

http://catalog.gmu.edu
Consumerism
Corporate/Community Relations
Economics of Politics
Eighteenth Century Medicine
Environmental Design
Procurement and Grants
Graphic Arts and Photography
Health Care Program Administration
Interpretive Naturalist
Liturgical Music
Medical Illustration
Meteorology and Oceanography
Museum Management
Music Management
Philosophy and Psychology of Sports
Senior Citizen Communities
Therapeutic Recreation in Gerontology
Women's Studies
Writing for Government

Credit for Nontraditional Modes of Learning

In addition to liberal acceptance of credit earned through traditional coursework at accredited institutions, the University's B.I.S. degree allows a student to receive college credit for learning acquired through a variety of nontraditional methods.

A maximum of four credits for experiential learning demonstrated by a portfolio may be granted following an assessment and recommendation by the student's academic adviser or by a committee assembled by the faculty adviser. The number of credits granted for experiential learning is not limited if such learning can be demonstrated by examination such as course equivalency examinations offered by academic departments. Credit for experiential learning granted by other institutions, however, may not be transferred unless such credit was earned through examination.

Credit earned through CLEP, USAFI, or DANTES subject examinations can be granted. A limited amount of credit may also be earned through CLEP General Examinations. Credit earned through correspondence courses, television courses, and other nontraditional modes of imparting knowledge certified by accredited institutions of higher learning can be applied toward the degree. Completion of certain recognized certificate programs may also be granted credit. Course work taken through branches of the military, government agencies, and some private corporations may be transferred if such course work is indexed and evaluated as college-level work by the American Council of Education.

B.I.S. Course Work at Consortium Institutions

George Mason University awards the B.I.S. degree on behalf of the Northern Virginia Consortium. The members of the Northern Virginia Consortium are George Mason University (the host institution), Marymount University, Northern Virginia Community College, Strayer College (Arlington campus), the Northern Virginia Centers of the University of Virginia, and Virginia Polytechnic Institute and State University. Course completed at any Consortium institution count toward the 30-semester-hour Consortium requirement of the B.I.S. degree. In addition, fewer restrictions apply to the transfer of Consortium credits into the B.I.S. program than into traditional programs.

Although permission must be obtained from the Dean, Division of Continuing Education, for admitted George Mason University students to take courses at other institutions, the B.I.S. program allows full use of the education resources of the Consortium in work toward the B.I.S. degree. Faculty members at Consortium institutions may serve on the BIS 490 Project Committee, although only a George Mason University faculty member may sign an educational contract or serve as the major adviser.

Certificate Programs in Gerontology

The Division of Continuing Education administers the undergraduate and graduate certificate programs in gerontology. The certificate programs in gerontology are designed for students who wish to train for work with older people and for professionals already working with the elderly. The programs provide a background of basic knowledge in gerontology and then permit the students to train in professional skills in areas such as recreation, social service, nursing, and administration. Six departments participate in these interdisciplinary programs--Education, Health and Physical Education, Psychology, Sociology, Public Affairs, and Social Work--as does the School of Nursing. Consult the Certificate Programs section of this catalog for additional information. Counseling and an application form may be obtained at the Office of Individualized Study Degree Programs, Room 124 East, 323-2342.

Other Programs

Off-Campus Credit Instruction

Off-campus credit instruction is offered at sites convenient to the residential communities and places of employment in Northern Virginia and at times that are convenient for working adults. Currently, the Division administers more than 70 courses in 13 disciplines at more than 6 off-campus locations.

All off-campus graduate and undergraduate courses are approved by the appropriate college or school in the University and are fully applicable as resident credit toward the appropriate degree at George Mason. In most instances, these courses are taught by full-time faculty members of the University. Transcript records for courses taken off campus are identical to those taken on campus. The University calendar, regulations, and tuition are the same for off-campus courses as for those on campus. The University insists that its faculty and students adhere to all regulations of the off-campus facilities, such as those concerning smoking, parking, and security.

Students who wish to register for an off-campus course may do so in the Division of Continuing Education or through the Office of the Registrar at the time they are approved to take the course. Registration periods for all courses are scheduled on campus before the beginning of each term or semester.

Contract Courses

The University offers specialized courses designed to meet the specific needs of a business, government agency, or school system on campus, at the work site of the client, or at a designated location. These

http://catalog.gmu.edu
contract courses are approved by the appropriate college or school of the University. They are taught by faculty members or recognized authorities.

Contract courses are offered for credit or may also be offered on a noncredit basis specifically designed for a particular audience. The students may receive Continuing Education Units (CEUs) or some other recognition of achievement that may apply toward professional certification. The major topical areas have been Management Information Systems, Technical Project Management, Proposal Writing, Logistics Management, Purchasing, Performance Appraisal, Production and Inventory Control, Expert Systems, and Communications. Contact the Coordinator of Off-Campus Instruction for specific information.

Professional Awareness Programs

The Division of Continuing Education Professional Awareness Programs provide quality training and education to professional managers and potential executives who are moving into positions requiring broad managerial or technical talent. Programs are usually conducted at the Professional Center in Arlington, and are open to the public. However, programs can be arranged on site at the organization or elsewhere in the Washington metropolitan area if requested. Program offerings are reasonably priced and conveniently designed to avoid taking participants away from their jobs for substantial lengths of time.


Contact the Coordinator of Off-Campus Instruction for specific information pertaining to offerings.

Inservice Education

Among the primary audiences served through inservice contract courses are the teachers and administrators of local school divisions. Inservice experiences are specially designed to increase the knowledge and upgrade the competence of public and private school educators on a variety of topics. Contract courses are offered in school divisions by University departments in such specialized areas as, for example, computer literacy, the teaching of writing, and substance abuse.

Instructors for inservice contract courses are adjunct University faculty members as well as full-time faculty members. Inservice credit courses are applicable to degree programs subject to adviser approval.

For further information contact the GMU Inservice Education Coordinator in the Division of Continuing Education.

Nursing Continuing Education

The School of Nursing, in cooperation with the University's 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 School of Nursing utilizes the wealth of available resources in Northern Virginia and the Washington metropolitan area.

Comments and suggestions for programming from the health care community are welcomed and encouraged. One may be placed on the mailing list to receive notice of specific activities scheduled throughout the academic year by contacting either the Division of Continuing Education or the School of Nursing.

Community Services Activities

The Office of Community Services is a significant outgrowth of continuing education at the University. Its purpose is to bring the University to the community and the community to the University.

To accomplish this, the Office of Community Services focuses on both community education and service programs such as conferences, workshops, seminars, institutes, or short courses. They may be either sponsored or co-sponsored by the University, in addition, conferences of outside organizations or groups may be serviced by the University for a fee.

Community Services maintains an active conference servicing component. In this regard it assists with the planning of numerous conferences, workshops, seminars, and summer residential programs that provide an opportunity to share with the community some of the University's unique capabilities, resources, and faculty expertise.

Community Services also assists faculty members in sponsoring conferences, workshops, and seminars to promote continuing education in their respective professions. In this capacity, it has facilitated meetings for educators in various fields and encouraged the academic departments of the University to work with public agencies, professional organizations, and private concerns to offer one- and two-day conferences and occasional residential programs to be conducted primarily by University faculty members. Continuing Education Units (CEUs) may be awarded to participants as permanent records of their attendance in previously designated community education programs.

The University offers outstanding accommodations for continuing education programs for business, industry, and professional associations. Its two campuses provide a wide choice of meeting rooms and facilities. Noncredit programs at the Main Campus are usually held in Student Union II, the Harris Theatre, or in several large lecture halls. These have included an annual "New Horizons in Technology Lecture Series," library continuing education courses and workshops, a class in test preparation, and conferences on high technology, business management, education, and government contracts. Other sites may be used for specific activities, such as music programs, which are usually held in the Humanities Module. The GMU Professional Center, located on the third floor at the Metro Campus in Arlington, Virginia, is accessible through the Virginia Square Metro Station. Many community education and service programs are held.
there throughout the year, including art displays, theater productions, and numerous workshops, conferences, seminars, credit and noncredit courses.

* School of Continuing and Alternative Learning

During the 1986-87 academic year, a task force created at the request of the President undertook a study to recommend future directions for the continuing education mission of George Mason University. The task force recommended that the division's responsibilities be expanded to include leadership within the institution in developing interdisciplinary and nontraditional curricula and in using technology as a delivery system for learning. Additionally, the task force concluded that the division's name should be changed to School of Continuing and Alternative Learning to reflect its new enlarged role. The new school was approved, and implementation of the task force's report is being undertaken.
Certificates and University Courses
Certificates and University Courses

Certificate Programs

The Faculty Senate, acting on advice from the committee on University Curriculum Matters, has established guidelines for the offering of certificate programs by the various units of the University. Not meant as substitutes for degree programs, these certificate programs are special sequences of credit study, the completion of which is signified by the awarding of a certificate. Their use may be significant to individuals who already hold degrees and/or who are greatly interested in the fields in which these certificates are offered.

Each of the colleges and schools of the University has the ability to devise certificate programs, following University guidelines.

The following certificate programs are open to undergraduate and postbaccalaureate students. Completion of these programs requires the possession of a bachelor's degree either previously or simultaneously awarded. Additional certificate programs at the postbaccalaureate and master's level are described in the Graduate Catalog.

Certificate Program in Applied Archaeology

Purpose of Program

This certificate program in applied archaeology provides the basic knowledge, skills, and practical experience to students who want to learn more about archaeology as a public and business concern. The program is open to students from all disciplines, but it should be particularly useful to those majoring in history, geology, geography, American studies, and similar disciplines allied with anthropology, and those who may be seeking employment in the fields of cultural resource management, contract archaeology, public archaeology, and museums. Individuals who wish to enter the certificate program should contact Barbara Little, Anthropology Program.

Program Requirements

The certificate program in applied archaeology consists of 24 semester hours of courses beyond the introductory-level courses in anthropology (ANTH 120 and ANTH 114). Students receiving the certificate must hold a baccalaureate degree or be receiving a baccalaureate degree from George Mason University at the time they receive the certificate. Only those courses with grades of C or better will be counted toward the certificate program.

The 24 semester hours include:
1. Fifteen semester hours of core courses: ANTH 425 Public Archaeology, ANTH 430 Research Methods in Archaeology, SOCI 221 Statistics for the Behavioral Sciences or SOCI 305 Analysis of Social Data, ENGL 309 Independent Writing, ANTH 220 Field School in Archaeology or ANTH 325 Field Methods in Archaeology.
2. Six semester hours of electives selected from the following: ANTH 301 Native North Americans, ANTH 300 Civilizations, ANTH 305 Hunter-Gatherer Societies, ANTH 320 Lab Techniques in Archaeology, ANTH 322 Historical Archaeology, ANTH 370 Ecology and Culture, ANTH 375 Anthropological Perspectives on History, ANTH 420 Interpretation in Archaeology.
3. ANTH 495 Internship. The internship is arranged by the student in consultation with the certificate program director; it offers the student an opportunity to gain practical experience in public/contract archaeology. A minimum of 10 hours per week for a semester (150 hours) are to be devoted to the internship project. Students must complete ANTH 425, ANTH 220 or ANTH 325, and ANTH 430 before enrolling in the internship.

Certificate Program in Canadian Studies

This certificate program is interdisciplinary and emphasizes the combined English and French cultures that give Canada its unique flavor and cause many of its most enduring social problems. Individuals going into careers in business, politics, or any of the public professions (law, public administration, communications, etc.) will benefit greatly from the knowledge gained in completing the program. In many cases it will enhance that individual's potential for employment and promotion within his or her chosen career.

Individuals interested in the program can obtain information from any of the faculty members involved in the program. The coordinator of the program is Harold F. Gortner (Department of Public Affairs).

Program Requirements

The certificate program in Canadian Studies consists of 24 semester hours of courses taken within a number of departments throughout the University. Students receiving the certificate must hold a baccalaureate...
degree or be receiving one from George Mason University at the time they receive the certificate. Only those courses with grades of C or better will be counted toward the certificate program. The requirements of the program are as follows:

Required: CAST 300 Introduction to Canada

Three courses from among the five listed below:
- ANTH 399 Issues in Anthropology: Native Canadian Ethnology and History
- ENGL 360 FREN 460 Special Topics in Literature: Canadian/Quebec Literature
- GEOG 335 Geography of Canada
- GOVT 335 Government and Politics of Canada
- HIST 379 History of Canada

Four elective courses chosen from an approved list of courses, including any courses from the list above that are not counted toward the distributive core. Courses chosen must be approved by the coordinator of the Canadian Studies Program. No more than two courses may be chosen from any discipline. Current courses available to use as electives include:
- AMST 401 Themes in American Civilization*
- ANTH 201 Native North America
- ENGL 439 Special Topics: Non-British or American Literature*
- ENGL 449 Special Topics in Drama*
- ENGL 468 Special Topics in Poetry*
- ENGL 490 Special Topics in Film*
- FREN 202 Intermediate French (its equivalent, or any 300-level French language course)
- FREN 452 French-Canadian Literature (taught in French)
- FREN 481 Special Topics*
- GEOG 420 Physiography of North America
- GOVT 490 Seminar*
- HIST 420 Topics in twentieth century U.S. Diplomacy*

* Courses approved for the Canadian Studies certificate program, by the coordinator, based upon the content of the course. Other courses will be considered when the content is appropriate.

Certificate Program in Cartography

The certificate program in cartography provides specialized training in technical skills needed for advanced map design and production. Students learn aerial photograph interpretation and photogrammetry in addition to both computer-aided and photomechanical methods of map making. Students also gain a thorough knowledge of cartographic theory. We welcome students from all disciplines who are interested in a specialty in cartography. The program may be especially useful for those in the natural and social sciences who wish technical training before possible employment in the many private sector mapping firms and government mapping agencies in the Washington, D.C., metropolitan area.

Inquiries should be directed to Prof. Robert Rundstrom, Department of Public Affairs.

Program Requirements

The certificate program in cartography consists of 26 semester hours of courses. Students receiving the certificate must hold a baccalaureate degree or be receiving a baccalaureate degree from George Mason University at the time they receive the certificate. Only courses with grades of C or better will be counted toward the certificate program.

No more than 12 hours may be completed at the 100 level. At least 12 hours must be completed at the 300-400 level. A maximum of six hours may be transferred from another institution, with the approval of the Certificate Program Adviser.

The 26 hours required in the certificate program must include the following 17 hours of courses: GEOG 310, 311, 411, 412, and 416. The remaining nine hours of electives must be approved by the Certificate Program Adviser prior to enrollment. An effort is made to tailor electives to individual needs. Consult the Certificate Program Adviser for a list of possible courses.

Certificate Program in Earth Science Teaching

The Department of Geology offers a certificate in earth science teaching for students who wish to become secondary school teachers of earth science in Virginia. This certificate program is open to students majoring in any science, but is designed primarily for geology majors. The certificate program consists of 31-32 semester hours, which, in conjunction with a college degree in science, makes a potential teacher eligible for a Provisional Certificate (good for two years) to teach earth science. A Collegiate Professional Certificate (good for five years, renewable) follows the Provisional Certificate and may be obtained later by passing the National Teacher Examination, by demonstrating competency during the two years of Provisional Certificate teaching, and by accumulating at least nine semester hours of education courses in the areas of human growth and development, foundations of education, and curriculum and development (at least one course in each area is required). Students who wish to obtain a certificate in earth science teaching must hold a baccalaureate degree or must be receiving a baccalaureate degree at the time they receive the certificate.

The semester-hour requirement includes a year of introductory geology (GEOL 101-102) plus the following courses:
- ASTR 103 Astronomy (3:3:0)
- CHEM 211-212 General Chemistry (4:3:3) or BIOL 113 Biological Science (4:3:3) or BIOL 151 Introduction to Biology (4:3:3)
- GEOG 309 Introduction to Meteorology and Climate (3:3:0)
- GEOL 309 Introduction to Oceanography (3:3:0)
- MATH 113 Analytical Geometry and Calculus (4:4:0)
- PHYS 201 Energy and Environment (3:3:0) or PHYS 250 University Physics (4:3:1) or PHYS 343 College Physics (3:3:0)
- EDI 573 Teaching Science in the Secondary School (3:3:0)

http://catalog.gmu.edu
Certificate Program in Environmental Management

The certificate program in environmental management is designed primarily for students who want to learn more about the problems and techniques of environmental management, who may be seeking employment in the field or intending to pursue graduate studies, and who wish to add an applied environmental component to their training.

Inquiries should be directed to Dr. Francis Heliotis, Department of Biology, 323-2181.

Program Requirements

The certificate program in environmental management consists of 27 semester hours of courses. Students receiving the certificate must hold a baccalaureate degree or be receiving a baccalaureate degree from the University at the time they receive the certificate. Students are required to complete a two-semester laboratory science sequence in biology, chemistry, or geology. Only courses with a grade of C or better will be counted toward the certificate program.

Students select 27 hours of course work with the help of the certificate coordinator. The courses are divided into five categories. Courses listed in more than one category can only satisfy the requirements of one. Any substitution from the following list requires permission from the certificate coordinator.

1. Environmental Certificate Core (4 courses)
   BIOL 377
   One course from GEOG 303, GECA 503
   One course from ECON 103, GOVT 241, GOVT 357
   One course in statistics

2. Physical Perspective (1 or 2 courses)
   BIOL 309; GEOG 102, 309, 430; GEOL 106, 204, 313, 403, 405

3. Biological Perspective (1 or 2 courses)
   BIOL 307, 309, 345, 446, 449, 471, 513, 526, 532, 543, 546, 549; HEAL 450

4. Social Perspective (1 course)
   ANTH 305, 365, 370; ECON 350, 360; GEEOG 301, 304, 305, 307; GOVT 318, 356, 401, 463, 536; MGMT 301; PHIL 555; SOCI 306

5. Environmental Methods (1 course)
   GEOG 310, 411, 412, 413, 416; GECA 579; DESC 352

Notes

1. Biology majors are required to complete 2 courses in Physical Perspective.

2. Geology and Geography majors are required to complete 2 courses in Biological Perspective.

3. All other majors can choose either Physical or Biological Perspective for 2 courses.

4. It is highly recommended that certificate students develop proficiency in computer programming.

Certificate Program in Geochemistry

The Department of Geology offers a certificate in geochemistry for students who wish to pursue a career that combines geology and chemistry. Professional geochemists study the geological and chemical processes at work in nature, in areas such as crystal chemistry, nuclear chemistry, thermodynamics, aqueous chemistry, and oceanic chemistry. Geochemists are employed in private, state, and federal agencies, in basic research and in developmental and environmental research. Students who wish to obtain a certificate in geochemistry must hold a baccalaureate degree or be receiving a degree at the time they receive the certificate. The course requirements include a year of introductory geology (GEOL 101-102), a year of introductory chemistry (CHEM 211-212), plus 12 semester hours of geology courses related to geochemistry (Group A below) and 12 semester hours of chemistry courses related to geochemistry (Group B below). Students should consult with the geochemistry certification specialist before pursuing a certificate in geochemistry. The appropriate courses are as follows (alternate courses may be approved by the geochemistry certification specialist):

Group A: Geology courses--must take at least one course from each group; must take a total of at least 12 credit hours.
   1. Mineralogy--GEOL 201, 305
   2. Petrology--GEOL 207, 401
   3. Geochemistry--GEOL 403, 404

Group B. Chemistry Courses--must take at least two courses from each group; must take a total of at least 12 credit hours.
   1. Analytical and Physical Chemistry--CHEM 321, 331, 335, 336, 422
   2. Inorganic and Organic Chemistry--CHEM 313, 314, 315, 318, 341, 441, 445

Certificate Program in Geoscience Programming

Geoscience programming is using modern computer technology to understand and to solve geology-related problems in areas such as resource analysis, environmental assessment and remedial response policy, engineering geology and cartographic interpretation. The Department of Geology offers a certificate in geoscience programming for students who wish to combine geology with computer skills. The certificate program consists of 27 semester hours which, in conjunction with a baccalaureate degree in geology, prepares the student for a career in public and private agencies that gather and interpret geoscience data. Students who wish to obtain a certificate in geoscience programming must hold a baccalaureate degree or be receiving a baccalaureate degree in geology at the time they receive the certificate. The course requirements for the certificate include the following:

- CS 103 Introduction to Computing (3:3:0)
- CS 161 Introduction to Programming Language (1:1:0)
- CS 262 Introduction to Computer Statistical Packages (3:3:0)
Certificate Programs in Gerontology

Committee

Rita Allinger, Aliza Kolkber, Catherine Kopac, Kathleen McGuinness, Jeanne Mellinger, Mary Montebello, Theodore Remley, Fred Schack, Moira Shannon

The undergraduate certificate program in gerontology is designed for students who wish to train for work with older people and for professionals working with the elderly. The program provides a background of basic knowledge in gerontology and then permits the student to train in professional skills in areas such as counseling, recreation, social services, nursing, and administration. The master's-level program is described in the Graduate Catalog.

The certificate program in gerontology is administered by the Division of Continuing Education. Six departments — Education, Health and Physical Education, Psychology, Public Affairs, Social Work, and Sociology — and the School of Nursing counsel students and form the policy committee for the program.

Individuals who wish to enter the bachelor's-level certificate program may obtain counseling and an application form from the Office of Individualized Study Degree Programs, Room 124 East, 323-2342.

Program Requirements

The bachelor's-level certificate program in gerontology consists of 24 semester hours of courses. Students receiving the certificate must hold a baccalaureate degree or be receiving a baccalaureate degree from the University at the time they receive the certificate. Students are required to have eight hours of biology, anatomy, or physiology, and three hours of psychology or sociology.

The 24 semester hours are divided as follows:

1. A minimum of 12 semester hours selected from NURS 480, NURS 569, PRLS 470, PSYC 415, and SOCI 441.

2. Six semester hours in a practicum in gerontology: PSYC 548, 549 (Students must have completed at least nine credits of core courses before enrolling in the practicum).

3. Three hours of electives selected from: EDUC 525, HEAL 220, PUAD 502, PSYC 326, SOCI 390, any 499 Independent Study (Emphasis in Gerontology).

To qualify for the certificate, a student may present all courses applicable to the certificate in which satisfactory grades have been received and no more than six hours in which D grades have been received.

Certificate Program for Psychology Technicians

Inquiries should be directed to Dr. Carol Erdwins, Department of Psychology.

Purpose of Program

The psychology technician program provides the theoretical background and behavioral skills necessary for successful performance at the paraprofessional or introductory level in many human service settings and agencies. Completion of this program enhances the graduate's ability to perform in settings such as group homes, sheltered workshops, and activity centers for emotionally disturbed children and adults; training centers for mentally retarded persons; adolescent treatment programs; and residential facilities for juvenile offenders and the aged.

Program Content

This certificate program consists of 30 semester hours in psychology beyond the introductory-level course (PSYC 100, which is a prerequisite to all other courses). These hours include PSYC 220, 325, 326, 322, 421, 422.

One of the following:
PSYC 211, 313, 314, 415

One of the following:
PSYC 320, 321, 330, 414, 423

Note: Some courses are prerequisites to others and need to be taken in sequence. Specifically, PSYC 325 is a prerequisite to PSYC 326 and 414; and both PSYC 325 and 326 must be completed before beginning the practicum (PSYC 421, 422). This practicum is ordinarily taken during the student's senior year; it offers the student an opportunity to gain work experience under supervision in a variety of human service agencies. The work placement is for approximately 8 to 10 hours per week with a minimum of 240 hours during the two semesters.

Program Requirements

The psychology technician program is open to persons who are majoring in or have previously completed a B.A. or B.S. degree in psychology, sociology, or social work, and nursing and B.I.S. majors with a psychology-related focus. Application to the program may be made at any time during the academic year after the student's completion of PSYC 325 and 326 and preferably prior to beginning the two-semester practicum (PSYC 421, 422). Students ready to begin the practicum should contact Dr. Erdwins prior to registration so that their names may be included for evaluation by a clinical review committee. Admission to the practicum is based upon the student's demonstration of sound interpersonal skills as well as successful completion of prior course work.

Completion of the Program

The psychology technician certificate is awarded upon completion of the 24 semester hours listed above with no more than two unsatisfactory grades (D) and minimum grade of B in each semester of the practicum.
The certificate is awarded after completion of and in conjunction with the baccalaureate degree unless the student has previously completed this degree with a major in one of the three specified disciplines.

Course Work

Descriptions of all courses applicable to this program, as indicated in the above requirements, are listed (in alphanumerical order) in the Course Descriptions.

Certificate Program in Real Estate and Urban Development

The certificate program in real estate and urban development provides an opportunity for students to enrich their understanding of the areas of study associated with urban planning, land development, real estate brokerage, law, finance, appraisal, investment, and management.

The certificate program consists of 24 semester hours of courses. It is primarily for students who have earned a baccalaureate degree in another discipline but plan to make a career in real estate and want additional recognition for their academic pursuits.

Individuals who wish to enter the certificate program may obtain an application from the Finance Department of the School of Business Administration.

Foundation Courses

Students must earn credit for the foundation courses listed below before enrolling for the five required courses. Concurrent registration is permissible for FNAN 301 and FNAN 351.

ACCT 201 Financial Accounting
ACCT 202 Managerial Accounting
ECON 103 Contemporary Economic Principles I
ECON 104 Contemporary Economic Principles II
DESC 200 Statistical Analysis I
DESC 202 Statistical Analysis II
BULE 301 The Legal Environment of Business
FNAN 301 Financial Management

Required Courses

FNAN 351 Principles of Real Estate
FNAN 304 Real Estate Law (same as BULE 304)
FNAN 451 Real Estate Finance
FNAN 452 Real Estate Appraisal
FNAN 453 Real Estate Investment

Elective Courses

After completing the five required courses, a student can select either the Finance Option or the Information System Option.

Finance Option

Select any three of the following courses:

FNAN 311 Principles of Investment
FNAN 321 Financial Institutions
FNAN 411 Investment Analysis each Portfolio Management
FNAN 421 Money and Capital Markets

Information Systems Option

Select any three of the following four courses:

DESC 301 Decision Models in Business and Operations Management
IRM 403 Computer System Analysis and Design
IRM 410 Managerial Applications of Microcomputers
IRM 411 Management Information Systems

Students selecting the information systems option will be required to have credit for the following courses, or their equivalents, before completing any courses in the information systems option:

MATH 108 Introductory Calculus with Business Applications
CS 161 Introduction to Programming
IRM 201 An Introduction to Computer-Based Management Information Systems

Only courses with grades of C or better will be counted toward a certificate. Up to six hours of courses may be transferred from another institution as substitutes for the required or elective courses.
University Courses

Committee on University Curriculum Matters
Guy O. Beale, Stephen J. Brown, Jeffrey T. Chamberlain (Chair), John M. Smith, Kitty S. Smith

University Courses are special academic offerings which are interdisciplinary, in-depth presentations of broad interest. Proposals for university courses are developed by faculty members, usually by several acting together. After review and approval by the University Faculty Standing Committee on Curriculum Matters, these courses are administered by the Office of the Vice President for Academic Affairs. Unless specific prerequisites are indicated, the courses are open to all students.

University Course offerings have included:
UNIV 190: Robinson Freshman Seminar (3)
UNIV 300: Robinson Fellow Seminar (3)
UNIV 301: Great Ideas in Science (3)
UNIV 407: Introduction to Irish Studies (3)
UNIV 410: Assassination and Terrorism as Political Weapons (3)
UNIV 411: Electronic Communication (Television) and the Representation of Reality (3)
UNIV 412: Family Law (3)
UNIV 413: Life in the Universe (3)
UNIV 414: Feminist Perspectives on Sexual Liberation (3)
UNIV 415: The New Deal: Its Impact on American Society, 1933-1980 (3)
UNIV 416: Intelligence in the Universe (3)
UNIV 417: Energy Alternatives for the Eighties (3)
UNIV 418: Corporate-Government Relations in the International Environment (3)
UNIV 420: Nuclear War (3)
UNIV 421: Archaeoastronomy (3)
UNIV 422: Popular Movements and Active Nonviolence in the U.S. (3)
UNIV 423: Consciousness and Modern Physics (3)
UNIV 424: South Africa: Crisis and Conflict (3)
UNIV 425: Utopias and Utopian Thought in the Western World (3)
UNIV 426: Human Allegiances and Modernization (3)
UNIV 427: Understanding Modern Japan: Its Social, Economic, and Political Characteristics and Interactions (3)
UNIV 428: Understanding the Brain (3)
UNIV 429: Security in the Nuclear Age (3)
UNIV 430: Where Have the Heroes Gone? (3)
UNIV 431: Generic Design (3)
UNIV 433: Ideas that Shape American Lives (3)
UNIV 434: Interracial and Interethnic Conflict: World Perspectives (3)
UNIV 435: Business Law Technology: An Analysis of Modern Social Organization (3)
UNIV 436: The Development Process: Cities from Fields (3)
UNIV 437: Approaches to Problem Solving (3)
UNIV 438: Literature and Society: The Caribbean Archipelago (3)
UNIV 439: Tradeoffs (3)
UNIV 440: Cultural Tradition and Political Event in Latin America (3)
Course Descriptions
Course Descriptions

Glossary

This section lists undergraduate and graduate courses offered by the University and available for credit to undergraduates. Courses are listed in alphabetical order beginning with Accounting and ending with Vietnamese. The computer name for courses is included with each heading. Except where obvious (i.e., English), the department offering the course is cited in the heading. The following computer names are used:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>ACCT</td>
</tr>
<tr>
<td>American Studies</td>
<td>AMST</td>
</tr>
<tr>
<td>Anthropology</td>
<td>ANTH</td>
</tr>
<tr>
<td>Arabic</td>
<td>ARAB</td>
</tr>
<tr>
<td>Art History</td>
<td>ARTH</td>
</tr>
<tr>
<td>Art Studio</td>
<td>ARTS</td>
</tr>
<tr>
<td>Asian Studies</td>
<td>ASST</td>
</tr>
<tr>
<td>Astronomy</td>
<td>ASTR</td>
</tr>
<tr>
<td>Bachelor of Arts and Sciences</td>
<td>BASC</td>
</tr>
<tr>
<td>Integrated Curriculum</td>
<td>BIS</td>
</tr>
<tr>
<td>Bachelor of Individualized</td>
<td>BIOL</td>
</tr>
<tr>
<td>Biology</td>
<td>BULE</td>
</tr>
<tr>
<td>Business Legal Studies</td>
<td>CAST</td>
</tr>
<tr>
<td>Cartography</td>
<td>GECA</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CHEM</td>
</tr>
<tr>
<td>Chinese</td>
<td>CHIN</td>
</tr>
<tr>
<td>Classics</td>
<td>CLAS</td>
</tr>
<tr>
<td>Communication</td>
<td>COMM</td>
</tr>
<tr>
<td>Comparative Literature</td>
<td>CL</td>
</tr>
<tr>
<td>Computer Science</td>
<td>CS</td>
</tr>
<tr>
<td>Dance</td>
<td>DANC</td>
</tr>
<tr>
<td>Decision Sciences</td>
<td>DESC</td>
</tr>
<tr>
<td>Economics</td>
<td>ECON</td>
</tr>
<tr>
<td>Education</td>
<td>EDUC</td>
</tr>
<tr>
<td>Education: Administration/</td>
<td>EDAS</td>
</tr>
<tr>
<td>Supervision</td>
<td>EDAS</td>
</tr>
<tr>
<td>Education: Elementary/Secondary</td>
<td>EDCI</td>
</tr>
<tr>
<td>Education: Guidance/Counseling</td>
<td>EDGC</td>
</tr>
<tr>
<td>Education: Reading</td>
<td>EDRD</td>
</tr>
<tr>
<td>Education: Special Education</td>
<td>EDESE</td>
</tr>
<tr>
<td>Electrical and Computer</td>
<td>ECE</td>
</tr>
<tr>
<td>Engineering</td>
<td>ENGR</td>
</tr>
<tr>
<td>Engineering</td>
<td>ENGL</td>
</tr>
<tr>
<td>European Studies</td>
<td>EUST</td>
</tr>
<tr>
<td>Finance</td>
<td>FNAN</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>FRLN</td>
</tr>
<tr>
<td>French</td>
<td>FREN</td>
</tr>
<tr>
<td>Geographic and Cartographic</td>
<td>GECA</td>
</tr>
<tr>
<td>Sciences</td>
<td>GECA</td>
</tr>
<tr>
<td>Geography</td>
<td>GEGOG</td>
</tr>
<tr>
<td>Geology</td>
<td>GEOL</td>
</tr>
<tr>
<td>German</td>
<td>GERM</td>
</tr>
<tr>
<td>Government and Politics</td>
<td>GOVT</td>
</tr>
<tr>
<td>Greek</td>
<td>GREE</td>
</tr>
<tr>
<td>Health Education</td>
<td>HEAL</td>
</tr>
<tr>
<td>Hebrew</td>
<td>HEBR</td>
</tr>
<tr>
<td>History</td>
<td>HIST</td>
</tr>
<tr>
<td>Information Resource Management</td>
<td>IRM</td>
</tr>
<tr>
<td>Information Systems</td>
<td>INFS</td>
</tr>
<tr>
<td>Italian</td>
<td>ITAL</td>
</tr>
<tr>
<td>Japanese</td>
<td>JAPA</td>
</tr>
<tr>
<td>Korean</td>
<td>KORE</td>
</tr>
<tr>
<td>LAC (Regional Cultures)</td>
<td>LATN</td>
</tr>
<tr>
<td>Latin</td>
<td>LATN</td>
</tr>
<tr>
<td>Latin American Studies</td>
<td>LAS</td>
</tr>
<tr>
<td>Management</td>
<td>MGMT</td>
</tr>
<tr>
<td>Marketing</td>
<td>MKTG</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MATH</td>
</tr>
<tr>
<td>Medical Technology</td>
<td>METCH</td>
</tr>
<tr>
<td>Middle East Studies</td>
<td>MEST</td>
</tr>
<tr>
<td>Music</td>
<td>MUSI</td>
</tr>
<tr>
<td>Nursing</td>
<td>NURS</td>
</tr>
<tr>
<td>Operations Research</td>
<td>OR</td>
</tr>
<tr>
<td>PAGE (Plan for Alternative</td>
<td>OR</td>
</tr>
<tr>
<td>General Education)</td>
<td>PAGE</td>
</tr>
<tr>
<td>Parks, Recreation, and Leisure</td>
<td>PAGE</td>
</tr>
<tr>
<td>Studies</td>
<td>PAGE</td>
</tr>
<tr>
<td>Philosophy</td>
<td>PHIL</td>
</tr>
<tr>
<td>Physical Education</td>
<td>PHED</td>
</tr>
<tr>
<td>Physics</td>
<td>PHYS</td>
</tr>
<tr>
<td>Plan for Alternative General</td>
<td>PAGE</td>
</tr>
<tr>
<td>Education</td>
<td>PAGE</td>
</tr>
<tr>
<td>Portuguese</td>
<td>PORT</td>
</tr>
<tr>
<td>Psychology</td>
<td>PSYC</td>
</tr>
<tr>
<td>Regional Cultures</td>
<td>LAC</td>
</tr>
<tr>
<td>Religion</td>
<td>RELI</td>
</tr>
<tr>
<td>Russian</td>
<td>RUSS</td>
</tr>
<tr>
<td>Social Work</td>
<td>SOCW</td>
</tr>
<tr>
<td>Sociology</td>
<td>SOCI</td>
</tr>
<tr>
<td>Spanish</td>
<td>SPAN</td>
</tr>
<tr>
<td>Statistics</td>
<td>STAT</td>
</tr>
<tr>
<td>Systems Engineering</td>
<td>SYST</td>
</tr>
<tr>
<td>Theatre</td>
<td>THR</td>
</tr>
<tr>
<td>University</td>
<td>UNIV</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>VIET</td>
</tr>
</tbody>
</table>

Undergraduate Catalog 1988-1989
George Mason University

http://catalog.gmu.edu
Course Numbering

General

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
   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.

Undergraduate

1. Courses numbered 499 and below are undergraduate courses. Course numbers in the 100 series are customarily taken by freshmen, the 200 series by sophomores, the 300 series by juniors, and the 400 series by seniors.

2. The number designations of the course descriptions below have the following significance:
   a. A single number (as HIST 301) indicates that the course is complete within a single semester, and that the semester course may be taken separately with credit toward a degree.
   b. A double number separated by a hyphen (as CHEM 103-104) indicates that the course extends through two semesters, that both semesters must be completed before the course may count toward a degree, and that the first semester is prerequisite to the second semester. Students may not take the second semester of a hyphenated course unless they have received either transfer credit for the equivalent of the first semester or advanced placement from the department concerned.
   c. A double number separated by a comma indicates that the subject matter or content of the course extends through two semesters but that either semester may be taken by itself. Unless otherwise specified, the first semester is not prerequisite to the second semester.

3. Advanced undergraduate students who have secured the permission of the department offering the course may select from courses numbered 500-599 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.
Accounting Courses (ACCT)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the School (except as general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.


202 Managerial Accounting (3:3:0). Prerequisite ACCT 201. Survey of managerial accounting. Manufacturing cost systems, budgets, and cost-volume-profit analysis are introduced. Special attention is directed to the use of accounting information in managerial decision making.

311 Cost Accounting (3:3:0). Prerequisite ACCT 202. Topics include accumulation allocation, analysis, and reporting of internal financial data. Discussion of the use of cost information in inventory valuation, income determination, planning, controlling, and decision making.

312 Accounting Information Systems (3:3:0). Prerequisite ACCT 311 and IRM 201. An examination of techniques for analysis and design of systems that provide accounting and financial data for both internal and external users. Emphasis is on the accountant's role in systems development and control.


351 Federal Taxation (3:3:0). Prerequisite ACCT 202. Introduction to federal income taxation of individuals. Examination of tax laws and procedures through the use of illustrative examples and problems.


431 Advanced Financial Accounting (3:3:0). Prerequisite ACCT 332. Preparation of consolidated financial statements, partnership accounting, international accounting, and other financial accounting topics. (Not available to those with credit for ACCT 333.)

451 Advanced Federal Taxation (3:3:0). Prerequisite ACCT 351. Federal taxation of corporations, partnerships, fiduciaries, and gratuitous transfers. (Not available to those with credit for ACCT 352.)

461 Auditing (3:3:0). Prerequisite ACCT 331 and DESC 202. An introduction to the public accounting profession with emphasis on the attest function and auditor's report. Includes an examination of auditing standards and procedures, the impact of internal controls, professional ethics and responsibilities, and an introduction to statistical auditing and the audit of computerized accounting systems.


472 Accounting for Nonprofit Entities (3:3:0). Prerequisite ACCT 471. Application of fund-based accounting practices to hospitals, schools, churches, charities, and other nonprofit organizations.

491 Accounting Seminar (3:3:0). Prerequisite 84 hours and ACCT 332. Discussion of selected current topics in the theory and practice of accounting and auditing.

492 Field Experience in Accounting (3:3:0). Prerequisite Senior standing and permission of instructor. This educationally relevant, faculty-governed field experience gives students an opportunity to become involved in addressing actual challenges encountered by Northern Virginia businesses. Working through the Entrepreneurship Center, each client firm will be matched with a team of students assigned to propose action plans relating to a major problem or opportunity faced by the company.

499 Independent Study (1-3:0:0). Prerequisite 9 hours in upper-level ACCT courses. Research and analysis of selected problems or topics in accounting. Must be arranged with an instructor and student must receive written approval of chair before registration. Written report required. May be repeated to a maximum of six hours if topics vary.

American Studies Courses (AMST)

American Studies

101 Introduction to the American News Media (3:3:0). Examination of the rhetoric of print and broadcast news media, the process by which the news is gathered and produced, and the issue of whether and to what extent the content of the news is influenced by such economic and political factors as ownership, advertising, the power of government, etc.

201, 202 Studies in Popular Culture (3:3:0), (3:3:0). Aspects of popular culture and its significance in contemporary society. Topics include the social and intellectual background of American culture; themes and techniques of major forms of communication; and the conventions of such media as television, film, comics, advertising and westerns. May be repeated for credit with permission of chair.

205 Introduction to American Culture (3:3:0). Introduction to American culture through the study of one or more issues, themes, or periods examined primarily but not exclusively from a literary perspective.

302 Introduction to American Studies (3:3:0). Prerequisite 45 hours. Seminars are limited to 20; preference to AMST majors. Introduction to interdisciplinary methods and to the interdisciplinary concentrations offered by the American studies program.

310 Places and American Culture (3:3:0). Prerequisite 45 hours. Examination of the relationship between the natural landscape and American culture. Particular subtitles will be announced and the courses may be repeated when the subtitle is different. Seminars are limited to 15.

320 Peoples and American Culture (3:3:0). Prerequisite 45 hours. Examination of the relationship between the various peoples of the American continent and American culture. Particular subtitles will be announced and the course may be repeated when the subtitle is different. Seminars are limited to 15.

330 Eras and American Culture (3:3:0). Prerequisite 45 hours. Examination of the relationship between specific historical eras and American culture. Particular subtitles will be announced and the course may be repeated when the subtitle is different. Seminars are limited to 15.

340 Institutions and American Culture (3:3:0). Prerequisite 45 hours. Examination of the relationship between American institutions and American culture. Particular subtitles will be announced and the course may be repeated when the subtitle is different. Seminars are limited to 15.
401 Themes in American Civilization (3:3:0). Prerequisite 54 hours. Seminars are limited to 15; preference to AMST majors. Intensive study of a significant theme, motif, or idea in American culture. Subject determined by instructor.

402 Readings in American Studies (3:3:0). Prerequisite 54 hours. Seminars are limited to 15; preference given to AMST majors. Advanced application of AMST methods to primary documents and artifacts of American culture. Subject determined by instructor.

403 American Studies Independent Study (1-6:0:0). Prerequisite 54 hours, permission of chair and permission of instructor. Intensive study of a period, problem, or aspect related to American culture proposed by an individual student to be conducted in close consultation with an AMST faculty member.

410 Senior Seminar in American Studies (3:3:0). Prerequisite AMST majors with 90 hrs. Senior majors in the program will complete significant projects in the interdisciplinary concentration they have chosen. Seminars are limited to 15.

490 Internship (2-6:0:0). Prerequisite 54 hours and permission of chair. Internships are nonpaying, work-study positions established by the 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.

502 Problems in American Culture (3:3:0). Prerequisite graduate standing. Interdisciplinary study of a particular aspect of American culture. Limited to 15 students. Specific content varies and is announced before registration. May be repeated with permission of chair. Past offerings were The Hudson River, Early American Culture, The American Imagination and World War I, and The Enlightenment.

Anthropology Courses (ANTH)

Sociology and Anthropology

114 Introduction to Cultural Anthropology (3:3:0). Introduction to the branch of anthropology that describes people living in societies today, and that seeks to explain human behavior and various aspects of primarily non-Western culture and society. For non-Western credit.

120 Introduction to Archaeology (3:3:0). Introduction to survey of anthropological archaeology. Development and use of contemporary theory and field and lab methods.

135 Human Evolution and Prehistory (3:3:0). Exploration of human origins and nature; of primate social groups and behavior; of fossil evidence for human evolution and for the evolution of culture of the earliest humans, and for the problems of natural and sexual selection, race and intelligence, aggression and other topics.

220 Field School in Archaeology (3:6-0:0). Prerequisite ANTH 120 or permission of instructor. Intensive four- to six-week summer term on-site introduction to archaeological field methods. Lectures on method and theory in archaeology, on local culture history, and on specific research methods accompany field and lab work. The entire time is spent at one site; location may change each summer.

299 Independent Study (1-3:0:0). Prerequisite ANTH 114 or permission of instructor. Individual study in anthropology on topic organized in advance by student and instructor.

300 Civilizations (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Cross-cultural and trans-temporal examination of complex societies and civilizations. Exploration of developmental schema for rise, articulation, spread and decline of historic and contemporary civilizations. For non-Western credit.

301 Native North Americans (3:3:0). Prerequisite 54 hours, ANTH 114 or permission of instructor. Examination of contemporary Native American cultures and of selected aspects of Indian-white historical relations. Emphasis on cultural persistence as well as change. For non-Western credit.

302 Indigenous Populations of Mesoamerica (3:3:0). Prerequisite 54 hours, ANTH 114 or permission of instructor. Examination of contemporary Mesoamerican cultures and of selected aspects of historical record.

303 Peoples and Cultures of Selected Regions (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Examination of contemporary cultures of a specific region, e.g., India, South America.

304 Peoples and Cultures of the Pacific (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Examination of contemporary cultures of the Island Asia cultural region, focus on the native cultures of Indonesia, Borneo and the Philippines. For non-Western credit.

306 Peoples and Cultures of Island Asia (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Examination of contemporary cultures of the Island Asia cultural region, focus on the native cultures of Indonesia, Borneo and the Philippines. For non-Western credit.

307 Peoples and Cultures of the Middle East (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Examination of contemporary cultures of the Middle East and North Africa; focus on articulation of societies in the interplay of ecological and historical factors. For non-Western credit.

308 Peoples and Cultures of Africa (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Examination of contemporary cultures in sub-Saharan Africa. Several traditional societies are studied in depth, with attention to their emerging roles in modern African nation-states. For non-Western credit.

310 Social Organization and Kinship (3:3:0). Prerequisite 54 hours ANTH 114 or permission of instructor. Examination of social organization, kinship, descent and kinship terminologies in mainly non-Western cultures, emphasizing both the meaning of specific cultural systems and cross-cultural similarities and differences.

311 Peoples and Cultures of Mainland Southeast Asia (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Survey of societies of mainland Southeast Asia, with emphasis on successive waves of outside cultural influences and relations between contrasting ethnic groups in modern states. Focus on Thailand and Malaysia. For non-Western credit.

312 Comparative Political Systems (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Examination of cultural and ecological contexts of political structures and competition for power in selected societies; a cross-cultural and comparative approach to study of political conflict, leadership, values and symbolism.

313 Anthropological Perspectives on Religion (3:3:0). Prerequisite 54 hours. ANTH 114, or permission of instructor. Examination of religion as a cultural system. Topics include mythology, ritual, symbolism and dogma. Cross-cultural and predominantly non-Western material are emphasized. For non-Western credit.

315 Socialization Processes (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Examination of selected aspects of the cultural transmission process in specific local cultures, selected from various world culture regions, with emphasis on transmission of cultures.

320 Laboratory Techniques in Archaeology (4:3:2). Prerequisite ANTH 120, 54 hours, or permission of instructor. Study of research techniques by directed group projects in analysis of materials such as ceramics, glass, and ethnics through discussions, demonstrations, and participation.

322 Historical Archaeology (3:3:0). Prerequisite ANTH 120, 54 hours, or permission of instructor. Examination of materials, theories and methods of archaeology derived from and applied to historical sites, as they complement archival records.

325 Field Techniques in Archaeology (3-6:0:0). Prerequisite 54 hours, ANTH 120, or permission of instructor. Intensive study of archaeological field techniques by directed group projects in site survey, site testing, recording techniques, and stratigraphy through discussions, demonstrations, and hands-on experience. May be repeated for credit; six credits maximum.

Undergraduate Catalog 1988-1989
George Mason University

http://catalog.gmu.edu
332 Cultures in Comparative Perspective (3:3:0). Prerequisite ANTH 114, or permission of instructor. Historical and comparative examination of various theoretical orientations in cultural anthropology and analysis of contrasting explanations of cultural data. Several cultures are studied in depth. For non-Western credit and credit for the sociology and international studies majors.

360 Biological Aspects of Human Sociality (3:3:0). Prerequisite ANTH 135, 54 hours, or permission of instructor. Inquiry into the biological dimensions of humans as culture-bearing animals. Topics include altruism, aggression, primate social organization, morphology, comparative ethology, and microevolutionary genetic differentiation.

365 Human Diversity (3:3:0). Prerequisite 54 hours, ANTH 135 or permission of instructor. Variations in culturally distinct human groups due to environmental, physiological, genetic, nutritional disease, and spatial factors.

370 Ecology and Culture (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Examination of relationships between environment, culture, and human behavior with an emphasis on cultural ecological explanations in mainly non-Western contexts.

371 Psychological Anthropology (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Survey of issues in study of relationships between cultural and psychological variables. Major topics viewed cross-culturally include personality, mental illness, projective systems, cognition and learning.

375 Anthropological Perspectives on History (3:3:0). Prerequisite 54 hours, ANTH 114, or permission of instructor. Use of ethnographic, archaeological, linguistic and documentary data, in light of anthropological theory, to interpret the past and processes of change among indigenous peoples throughout the world.

380 Anthropological Linguistics (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Anthropological analyses of language behavior, origins and change, emphasizing interplay between language and culture, and anthropology and linguistics.

381 Comparative Medical Systems (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Survey of the discipline of medical anthropology with focus on traditional medical beliefs and on the diverse responses to modern scientific medicine both in developing countries and among cultural minorities in the U.S.

399 Issues in Anthropology (3:3:0). Prerequisite 54 hours, ANTH 114, and permission of instructor. A topic of contemporary interest in anthropology, changing from semester to semester, and focusing on topics such as sex roles, anthropology and ethics, and primate social organization. Repeatable for credit.

420 Interpretation in Archaeology (3:3:0). Prerequisite 6 hours of anthropology including ANTH 120 or permission of instructor. Exploration of theoretical and methodological issues encountered in archaeology. Patterns and contexts of archaeological remains, analytic problems, and interpretation of material culture will be considered.

425 Public Anthropology (3:3:0). Prerequisite 6 hours of anthropology including ANTH 114 or permission of instructor. Consideration of the public significance of archaeology, and anthropological contributions to public concerns such as antiquities, legislation and cultural resource management.

430 Research Methods in Archaeology (3:3:0). Prerequisite 54 hours, ANTH 120, or permission of instructor. The archaeological research process will be studied through discussions of current archaeological methodologies and through student participation in designing and critiquing research projects.

435, 436 Special Projects in Archaeology (1-3:0:0). Prerequisite ANTH 320 or 325 or 430 and permission of instructor. Lab or field project leading to a written report of the research. Research and paper are completed under the instructor's guidance.

440 Applied Anthropology (3:3:0). Prerequisite ANTH 114, 54 hours, or permission of instructor. Focus on anthropologists' contributions to major policy issues in development agencies in the U.S. and abroad. Attention to techniques that lead to prevention or management of social and cultural conflict.

450 Qualitative Methods in Sociocultural Research (3:3:0). Prerequisite 54 hours and 6 hours of anthropology including ANTH 114, or permission of instructor. Exploration of some of the most useful nonquantitative research techniques used in social sciences and practice in their application.

490 Classics in Anthropology (3:3:0). Prerequisite 9 hours of anthropology including ANTH 332 and 54 hours, or permission of instructor. Examination of some of the most important works in anthropological theory and explanation. Explores merits of works recognized as classics and assesses their impact on the field. Required for anthropology majors and usually taken as a senior-junior seminar.

495 Internship (3:6:0:0). Prerequisite 54 hours, ANTH 120, or permission of instructor. Supervised project in applying anthropology, i.e. public archaeology, development anthropology, museums. May be repeated for credit; 6 credits maximum.

499 Independent Research (1-3:0:0). Prerequisite 54 hours or 9 hours of anthropology or permission of instructor. Individual research on a topic to be organized in advance by student and instructor.

Arabic Courses (ARAB)

Foreign Languages and Literatures

101 Introduction to the Arabic Language (3:3:1). Introduction to Modern Standard Arabic, with emphasis on the written language. Lab work required.

102 Introduction to the Arabic Language (3:3:1). Prerequisite Arabic 101 or permission of department. Continuation of Arabic 101. Lab work required.

201 Intermediate Arabic I (3:3:1). Prerequisite ARAB 102 or equivalent. Further development of skills acquired in Arabic 101 and 102 including grammar, vocabulary, listening, speaking, reading, and writing. Lab work required.

202 Intermediate Arabic II (3:3:1). Prerequisite ARAB 201 or equivalent. Continuation of Arabic 201 with emphasis on the application of language skills to reading, composition, and discussion. Lab work required.

Art History Courses (ARTH)

Art

101 Art Appreciation (3:3:0). Introduction to principles of aesthetics in art through a study of painting, sculpture and architecture; chronological (prehistoric times to the present) or ideational approach varying with the instructor.

102 Symbols and Stories in Western Art (3:3:0). Classical and Christian themes and imagery in Western art from early Greece to the modern era.


112 History of Urban Design in Early Modern Europe (3:3:0). Development of city planning from Middle Ages to the Renaissance, the scenicographic effects of the Baroque city, and the rise of the new industrial city in the eighteenth century. Considers placement of buildings and public monuments in urban design.

180 History of African Art (3:3:0). Highlights the variety of artistic styles and symbolic traits of cultures in Africa producing artistic artifacts. Concentrates on the central and western sub-Saharan regions and proceeds geographically.
Art History 149

200, 201 Survey of Western Art (3:3:0). Western art as expressed through architecture, sculpture, and painting. The first semester covers prehistoric to Renaissance; the second covers Renaissance to the present.

210 History of Design (3:3:0). Prerequisite 100-level or above course in ARTH or ARTS or permission of instructor. Role of design in arts from antiquity to the present.

280 Survey of Far Eastern Art (3:3:0). Art of India, China, Japan, Southeast Asia, Korea, and Indonesia from Bronze Age through the twentieth century, exploring role of Buddhism and Hinduism through visual representation.

315 History of Modern Architecture (3:3:0). Prerequisite 100- or 200-level course in ARTH or ARTS or permission of instructor. History and development of modernism in architecture from the Beaux Arts movement to the present, and an investigation of stylistic and structural innovations.

319, 320 Near Eastern Art (3:3:0), (3:3:0). Prerequisite 24 hours. Art and architecture of Egypt, Mesopotamia, Anatolia, Bronze-Age Crete and Greece, Mesoamerican, Iran, and Turkey, and their effect on other centers. ARTH 319 covers developments in Antiquity; 320, Islam.

321 Greek Art (3:3:0). Prerequisite 24 hours. History of ancient Greek architecture, sculpture, and painting.

322 Roman Art (3:3:0). Prerequisite 24 hours. History of Roman architecture, sculpture, and painting.

323 Ancient Painting (3:3:0). Prerequisite 24 hours or a 100- or 200-level ARTH course. Ancient wall painting and its functions and styles in the Mediterranean area.

332 Medieval Art (3:3:0). Prerequisite 24 hours. Architecture, sculpture, and painting from early Christianity through Gothic in Byzantine Empire and Western Europe.

340 Early Renaissance Art in Italy (3:3:0). Prerequisite 24 hours. Architecture, sculpture, and painting in Italy from circa 1300 to 1500.

341 Northern Renaissance Art (3:3:0). Prerequisite 24 hours. Architecture, painting and sculpture in France, Germany, and the Netherlands from circa 1300 to 1600.

342 High Renaissance Art in Italy, France, and Spain (3:3:0). Prerequisite 24 hours. Development of the High Renaissance style in architecture, painting, and sculpture in Italy, and its transformation through Mannerism.

344 Baroque Art in Italy, France, and Spain (3:3:0). Prerequisite 24 hours. Architecture, sculpture, and painting in Southern Europe from circa 1600 to 1750.

345 Northern Baroque Art (3:3:0). Prerequisite 24 hours. Architecture, painting, and sculpture in Belgium, England, Germany, and the Netherlands from circa 1600 to 1750.

350 History of Photography (3:3:0). Prerequisite ARTH 101, 200, or 201. Development of photography from origins in France in the nineteenth century to the present.

360 Nineteenth Century European Art (3:3:0). Prerequisite 24 hours. Movements from Neoclassicism to Symbolism will be discussed in relation to social, cultural, political, and technological changes in Europe.

362 Twentieth Century European Art (3:3:0). Prerequisite 24 hours. Study of major movements (Fauvism, cubism, futurism, constructivism, surrealism, neo-expressionism) and important artists in twentieth century painting and sculpture. Discussion will center on art, art theory, and the relation of both to European history.

371 American Architecture (3:3:0). Prerequisite 24 hours. Study of the history and development of American architecture in its cultural context from its inception in the seventeenth century to the twentieth century.

372 Nineteenth Century American Art (3:3:0). Prerequisite 24 hours. Artistic developments and the changing status of the artist in an historical context; the rise of American landscape and western expansion; genre painting and Jacksonian America.

373 American Art, 1900-1945 (3:3:0). Prerequisite 24 hours. Major developments in painting and sculpture from the turn of the century to World War II. Selected topics will include the emergence of an American avant-garde; the development of new subject matter with urbanization, regionalism, and art and politics in the 1930s.

374 American Art Since World War II (3:3:0). Prerequisite 24 hours. Topics including abstract expressionism, pop art, minimalism, conceptual art, feminist art, environmental art, the new figuration, and photorealism will be discussed in a historical and critical context.

392 Exhibition Projects (3:3:0). Prerequisite 6 hours in ARTS or 3 hours in ARTH or permission of instructor. Planning, promotion, and production of visual art presentations and related events on the GMU campus. Exhibitions are produced by students who alternatively serve in all operational capacities from proposal research and budget planning to the graphic design of announcements and the installation of exhibitions.

393 Art Apprenticeships (3:6-9:0). Prerequisite Art major with permission of instructor. 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.

399 Special Topics in the History of Art (3:3:0). Topics vary and include women in art, art patronage, art criticism, and others.

400 Methods of Research in Art History (3:3:0). Prerequisite two courses in ARTH at the 300 level or permission of instructor. Investigation of different approaches involved in art historical research.

420 Greek Sculpture (3:3:0). Prerequisite ARTH 321 or 322. Advanced study and research into the development of freestanding and architectural sculpture in Ancient Greece; works in bronze, stone and terra cotta.

440 Advanced Studies in Renaissance and Baroque Art (3:3:0). Prerequisite 300-level course in Renaissance or Baroque art or permission of instructor. Study in a particular aspect of Renaissance or Baroque art. Topics may be monographic, such as a study of Michelangelo or Rembrandt; thematic, such as a study of art theory or narrative art of a particular time; concentrated on the art of a smaller time period, e.g., 1500-1525, or a particular area, such as Venetian art. May be repeated for credit.

460 Advanced Studies in European Art-Nineteenth- Twentieth Centuries (3:3:0). Prerequisite 300-level course in Modern ARTH. Study in a particular area of modern European art. Topic may focus on a movement or group of artists (i.e., realism, impressionism, or fauvism) or on a theme which includes several time periods.

471 Advanced Studies in American Art (3:3:0). Prerequisite 300-level course in American art. Study in a particular area of American art, focusing on a form (landscape or genre painting), a theme (nationalism, regionalism, the iconography of the family), or a movement (American modernism).

490, 491 Independent Study in Art History (3:3:0), (3:3:0). Prerequisite 54 hours, permission of instructor, permission of art faculty, and permission of chair, plus 9 hours in ARTH beyond ARTH 200, 201. Intensive study of a particular artist, period, or theoretical problem to be conducted by an individual student in consultation with instructor. Study proposal submitted prior to registration.

592 Exhibition Projects (3:3:0). Prerequisite B.A. or equivalent permission of instructor. Planning, promotion, and production of visual art presentations and related events on the GMU campus. Exhibitions are produced by students who alternatively 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 (3:6-9:0). Prerequisite B.A. or equivalent permission of instructor. 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). Prerequisite B.A. or equivalent permission of instructor. Independent reading and research on a
specific project under the direction of a department member. A written report is required. May be repeated for credit.

599 Special Topics in the History of Art (3:0:0). Prerequisite B.A. or equivalent or permission of instructor. Topics vary and include women in art, art patronage, art criticism and others.

Art Studio Courses (ARTS)

Art

102 Visual Thinking (3:0:6). A studio primer including an introduction into drawing, sequential design, printmaking, and film-making imagery.

202, 203 Studio Fundamentals I, II (3:0:6), (3:0:6). Prerequisite ARTS 102. A two-semester course concerning basic visual decision making and the choice involved in ordering elements of a visual vocabulary into unified, coherent wholes. Establishes a basis for comprehension and use of the components to a visual language that is a foundation for further experience in the arts.

310, 311 Graphic Design (3:0:6), (3:0:6). Prerequisite ARTS 102, 202, and 203, or equivalent, or permission of instructor. Introduction to the concepts of graphic design and its techniques. Solutions to typical problems confronted by the graphic artist: newspaper layout, advertising layout, book design; taught as a series of studio problems. Emphasis is on developing individual awareness of the relationship between concepts, communication, techniques, and media.

312 Design I (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. This course provides an opportunity to investigate and experiment with visual communication in two- and three-dimensional form. Emphasis is on developing an individual awareness of the relationship between concepts, communication, techniques, and media.

322, 323 Drawing I, II (3:0:6), (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. Fundamentals of drawing with emphasis on perspective systems and skills in representing space, objects, and textures by a variety of methods. Offered sequentially.

332, 333 Painting I, II (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. Painting taught as observation through techniques in oil or water-based media, varying with the instructor. Offered sequentially.

342 Printmaking I: Silkscreen (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. Fundamentals of drawing with emphasis on perspective systems and skills in representing space, objects, and textures by a variety of methods. Offered sequentially.

343 Printmaking II: Relief (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. The process and history of basic relief methods of printmaking will be practiced and studied: woodcut, linoleum cut, wood engraving, relief collagraph with an introduction to color relief printing in editions. The application of relief printmaking to the design, illustration, and production of books and portfolios will be emphasized. Every other spring semester.


351 Color Slide Photography (3:0:6). Prerequisite Permission of instructor. A study of 35mm photography in terms of camera manipulation, basic optics and sensitometry, and aesthetics of the color slide medium. Students are required to provide a 35mm camera (preferably a single lens reflex camera), a light meter, and film.

362, 363 Sculpture I, II (3:0:6), (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. Fundamentals of sculptural design with emphasis on three-dimensional forming processes in a variety of media. Practical knowledge of sculptural materials and techniques, i.e., clay modeling, mold making, carving, basic woodworking, and their applications to 3-D form, concepts, and spatial relationships.

392 Exhibition Projects (3:0:3). Prerequisite 6 hours in ARTS or 3 hours in ARTS or permission of instructor. Planning, promotion, and production of visual art presentations and related events on the GMU campus. Exhibitions are produced by students who alternatively serve in all operational capacities from proposal research and budget planning to the graphic design of announcements and the installation of exhibitions.

393 Art Apprenticeships (3:6:0). Prerequisite Art major with permission of instructor. Introductory 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 areas in which the student is considering a career.

411, 412 Advanced Design (3:0:6), (3:0:6). Prerequisite ARTS 203 and 312. Continuation of Design I ideas and specialization in two-dimensional or three-dimensional design theories and practices.

422, 423 Drawing III, IV (3:0:6), (3:0:6). Prerequisite ARTS 322 or 323 or permission of instructor. Advanced drawing skills and techniques with an emphasis upon individual exploration in a variety of media.

432, 433 Painting III, IV (3:0:6), (3:0:6). Prerequisite ARTS 332 or 333 or permission of instructor. A more advanced painting course intended to develop individual control and direction of various media while exploring contemporary issues in painting.

442 Printmaking III: Intaglio (3:0:6). Prerequisite ARTS 102, 202, and 203, or permission of instructor. The process and history of basic intaglio methods of printmaking will be practiced and studied: monotype, metal and plastic engraving, etching, aquatint, embossing, soft and lift ground techniques, and an introduction to color intaglio printing. Every other spring semester.

443 (341) Printmaking IV: Color (3:0:6). Prerequisite ARTS 342 or 343 or 442 or permission of instructor. The process and history of color printmaking in the silkscreen, relief, and intaglio methods will be practiced and studied. The expressive and formal use of color will be explored via various printmaking processes and developed in a serial format. Every other spring semester.

452, 453 Black and White Photography I, II (3:0:6), (3:0:6). Prerequisite ARTS 350 or permission of instructor. Photography taught both as technical craft and as a way of seeing. Includes camera and darkroom operations and ideas relating to the photographic image.

462 463 Sculpture III, IV (3:0:6), (3:0:6). Prerequisite ARTS 362 or 363 or permission of instructor. A studio course intended to develop individual ideas and solutions by promoting more advanced thinking toward sculpture. Applying original concepts to problem-solving and exploring different ways to produce sculptural form will be stressed. Emphasis is on strengthening basic technical skills and introducing new skills.

491, 492 Advanced Studio Problems (2-4:0:0) (2-4:0:0). Prerequisite 54 hours, permission of instructor, and permission of chair. Study proposal submitted prior to registration. Opportunity for development of advanced skills and concepts in drawing, painting, sculpture, and other media. May be repeated for credit.

498 Special Topics in Studio Art (3:0:6). Prerequisite 24 hours and permission of instructor. Topics of special interest in the studio arts. Content varies. May be repeated with permission of the department.

532, 533 Painting V, VI (3:0:6), (3:0:6). Prerequisite ARTS 432 or 433 or permission of instructor. Painting on the advanced level. Emphasis on individual decision making and personal initiative.

562, 563 Sculpture V, VI (3:0:6), (3:0:6). Prerequisite ARTS 462 or 463 or permission of instructor. A studio course involving advanced thinking about sculptural design, materials, and processes. Prior experience in sculpture is necessary as considerable emphasis is placed upon individual decision making and personal initiative.

592 Exhibition Projects (3:0:0). Prerequisite Undergraduate degree in art or equivalent or permission of instructor. Planning, promotion, and production of visual art presentations and related...
events on the GMU campus. Exhibitions are produced by students who alternatively 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). Prerequisite Undergraduate degree in art or equivalent or permission of instructor. Introductory 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). Prerequisite Undergraduate degree in art or equivalent, or permission of instructor. Independent reading and creative work on a specific project under the direction of a department member. A written report is required. May be repeated for credit.

Asian Studies Courses (ASST)

Area Studies

450 Fundamental Themes and Issues of Asian Civilization (3-3:0). Prerequisite Junior standing in the Asian studies major or permission of instructor. This seminar examines the religious and philosophical traditions of East and South Asia in their cultural and historical settings, with special emphasis on values, ethics, social organization, and political ideology.

460A Seminar in History, Society, and Literature with the Focus on Literature (3-3:0). Prerequisite Junior standing in the Asian studies major or permission of instructor. Traces the development of Asian societies and cultures through time using major Asian literary works in English translation as source materials. Geographical foci will depend on the expertise of the instructor.

460B Seminar on Asian Society in Historical Perspective (3-3:0). Prerequisite Junior standing in the Asian studies major or permission of instructor. Aims at understanding some of the common themes and historical forces that forged critical links between the civilizations of South Asia, Southeast Asia, and East Asia in both modern and premodern times.

470 Seminar in Major Issues in Contemporary Asia (3-3:0). Prerequisite Junior standing in the Asian studies major or permission of instructor. An examination of the major problems currently facing individual Asian countries and the implications of these problems for the Asian and international communities.

Astronomy Courses (ASTR)

Physics

103 Astronomy (3:3:0). Introduction to origin of life, earth, planes and sun, stars, galaxies, quasars, and nature of space radiation, including general theory of relativity. Not for physics majors.

105, 106 Introduction to Modern Astronomy (4:3:2), (4:3:2). Lab course in astronomy for science majors. Topics include astronomical instruments, coordinates and time, celestial mechanics, astrophotography, planets, comets and meteorites, the sun, magnitudes and distances of the stars, and other topics. Can be used to fulfill the 8-hour lab science requirement; not for physics majors.

226 Foundations of Cosmological Thought (3:3:0). Examines the scientific, historical, and philosophical foundations and development of cosmological thought from antiquity to the present. Emphasizes a qualitative understanding of the development of cosmology concluding with the present concept of evolution and the universe. No advanced background in mathematics or the natural sciences is required.

328 Introduction to Astrophysics (3:3:0). Prerequisite PHYS 345 or 351, and MATH 113 or 115. Topics include physical concepts, magnitudes of stars, Hertzprung-Russell diagram, stellar radiation, interstellar matter, dust and molecules, and other topics.

428 Relativity and Cosmology (3:3:0). Prerequisite MATH 304 or 308 and PHYS 303, 305 and 352, or permission of instructor. Special relativity, 4-dimensional space-time, general relativity, non-Euclidean geometries, geodesics, and field equations, tests of general theory of relativity, black holes, cosmology, models of the universe, remnant blackbody radiation, big bang cosmology, thermodynamics and the universe.

505 Fundamentals of Astronomy (3:3:0). Prerequisite Graduate standing or permission of instructor. 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, our galaxy, quasars, general relativity, and cosmology. Recommended for teachers of general science.

Bachelor of Individualized Study Course (BIS)

Division of Continuing Education

490 Bachelor of Individualized Study Project (3:0:0). Final course in the B.I.S. degree program. Open only to students in the Bachelor of Individualized Study Program. Completion of an approved project in the student's area of concentration, to be evaluated by a three-member faculty committee. Credit earned for the project may not be part of the 12 hours of upper-division work required in the core. Individualized sections by arrangement.

Bachelor of Arts and Sciences Integrated Curriculum (BA/SIC) Course (BASC)

BA/SIC

100 Monthly meeting of BA/SIC students with faculty (0:0:0). Designed to help students integrate the cross-disciplinary knowledge presented in the BA/SIC curriculum.

Biology Courses (BIOC)

Biology

103 Contemporary Biology I (4:3:3). For nonscience majors. Emphasizes human evolution and homeostatic mechanisms. Students who have taken BIOL 113-114 or BIOL 124-125 are not eligible to take this course. Fall, summer term A.

104 Contemporary Biology II (4:3:3). Prerequisite BIOL 103. Topics include reproduction, genetics, plants, major ecosystems and ecological problems. Students who have taken BIOL 113-114 or BIOL 124-125 are not eligible to take this course. Spring, summer term D.

113 Biological Science (4:3:3). For science majors and preprofessionalists in the life sciences. Topics include the chemical and cellular basis of life, genetics, and evolution. Students who have previously passed BIOL 103 or 104 should consult the department undergraduate coordinator before enrolling. Fall, summer term A.

114 Biological Science (4:3:3). Prerequisite BIOL 113. Topics include the structure and function of plants and animals, ecology, and taxonomy. Spring, summer term D.

124, 125 Human Anatomy and Physiology (4:3:3). Introduction to structure and function of major organ systems of the body. Open first to nursing and physical education majors. Must be taken in sequence. Does not satisfy the natural science requirement in the College of Arts and Sciences. Not available for biology major credit. Fall, spring, summer.
151 Introduction to Biology (4:3:3). Basic biological concepts and their applications. Lab stresses common species. Spring.

211 Heredity and Society (3:3:0). Basic principles of heredity, including the probability of the gene, mutations and mutant genes in populations. Emphasis on human hereditary diseases, genetic counseling, and application of genetics to improving the quality of life. Not available for biology major credit.

225 Human Reproduction and Sexuality (3:3:0). Examination of the anatomy and physiology of human reproductive systems; physiology of sexual intercourse; normal pregnancy; birth; congenital conditions; sex determination and its expression; diseases of the reproductive organs; technical developments related to reproduction. Not available for biology major credit. Fall.


261 (185) Introductory Microbiology (4:3:3). Prerequisite BIOL 124, 125 or BIOL 103-104 or BIOL 113-114 or permission of instructor. The morphology, physiology, and ecology of selected groups of bacteria, fungi, protozoa, and viruses. Applied topics, including host-parasite interactions, are stressed. Not available for students who have taken BIOL 261 or 361. Spring.

274 Human Reproduction (4:3:3). Prerequisite BIOL 113, 115 or permission of instructor. Emphasis on vertebrate function, emphasizing common life problems and variety of methods for solving them. Topics include electrolyte balance, excretion, respiration, metabolism, thermoregulation, neuroendocrine control, and physiological rhythms. Fall, spring.

311 Invertebrate Zoology (4:3:3). Prerequisite BIOL 113, 303, or permission of instructor. Survey of the invertebrate phyla, excluding insects, to show the morphology, phylogeny, and general biology of these groups. Fall.

332 Insect Biology (4:3:3). Prerequisite BIOL 113, 303, or permission of instructor. Survey of insects including taxonomy, morphology, physiology, behavior, ecology, and economic importance. Summer term A.

333 Vertebrate Zoology (4:2:6). Prerequisite BIOL 113, 303, or permission of instructor. Phylogeny and systems of major vertebrate groups. Emphasis on ecological adaptation. Lab includes field studies of local fauna. Spring.

341 Phycology (4:3:3). Prerequisite BIOL 113, 304, or permission of instructor. Study of the biology of algae including taxonomy, reproduction, physiology, ecology, evolution, and economic importance.

342 Plant Morphology (4:3:3). Prerequisite BIOL 113, 304, or permission of instructor. Origin and development of organs, tissue systems, and life cycles of green plants, with phylogenetic comparisons from algae to angiosperms. Spring.

343 Mycology (4:3:3). Prerequisite BIOL 113, 304, or permission of instructor. Introduction to the fungi including morphology, taxonomy, growth and development, physiology, reproduction and ecology. Lab emphasizes representative organisms and isolation and culture techniques.

344 Taxonomy of Flowering Plants (4:3:3). Prerequisite BIOL 113, 304, or permission of instructor. Study of terminology and identification of flowering plants with emphasis on local flora. Spring.

345 Plant Communities (4:3:3). Prerequisite BIOL 113, 304, or permission of instructor. Plant associations and formations and their successions in North America. Three Saturday field trips required. Fall.

371 Animal Distributions (3:3:0). Prerequisite BIOL 113, 303, 304, or permission of instructor. Relations of the North and South American faunas with other regions in the light of continental drift. Emphasis on vertebrates. Spring.

377 Ecosystem Ecology (3:3:0). Prerequisite BIOL 113, 304, or permission of instructor. 54 hours. Introduction to ecosystem concepts and their applications to natural and managed ecosystems.

380 Biinstrumentation (4:3:3). Prerequisite BIOL 383 or permission of instructor. 101 hours. One semester college mathematics, or permission of instructor. Introduces modern instrumentation including basic electronics, data processing, principles of measurements, and sample handling. Presents theory necessary to understand bases of the instruments and principles involved in specific measurements. Spring.

383 Cell Biology (4:3:3). Prerequisite BIOL 113, 303, 304, CHEM 211-212, MATH 110 or 113, and junior standing. Cellular structure and function. Topics include fine structure, chemistry, metabolism and regulatory mechanisms. Fall, spring.

425 Mammalian Physiology (4:3:3). Prerequisite BIOL 113 or permission of instructor. Organ system approach to the study of mammalian homeostasis, including cardiovascular, respiratory, renal, digestive, endocrine, and nervous system functions. Spring.

440 Field Biology (4:2:6). Prerequisite BIOL 113, 303, 304, and 54 hours, or permission of instructor. Directed field studies emphasizing ecology and behavior. Topics vary, but include design of field manipulations, data collection and analysis, and an introduction to organisms of study site. Students bear the cost of required field trip(s).

441 Plant Anatomy (4:3:3). Prerequisite BIOL 113, 304, and 54 hours, or permission of instructor. Detailed study of plant cells and tissues, their derivation and development. Emphasis on angiosperms. Fall.

446 Environmental Physiology (3:3:0). Prerequisite BIOL 326 or permission of instructor. Physiological responses of animals to...
environmental factors and changes in the natural environment. Topics include bihythms; adaptation to temperature, high pressure, and altitude. Emphasis on vertebrates. Fall.

449 Marine Ecology (3:3:0). Prerequisite BIOL 307 or permission of instructor. Plants and animals of marine environments and physical and chemical conditions that affect their existence. Spring of odd-numbered years.

452 Immunology (4:3:3). Prerequisite BIOL 383 or permission of instructor. Topics include structure and function of immunoglobulins, role of cell-mediated immunity, protective role of the immune system, and disease and injury related to malfunctions of the immune system. Spring.

464 Plant Physiology (4:3:3). Prerequisite BIOL 383 or permission of instructor. Study of plant functions, photosynthesis, transport processes, mineral nutrition, plant development, and effect of environmental stimuli. Spring.

465 Histology (4:3:3). Prerequisite BIOL 113, 303, 54 hours, or permission of instructor. Study of microscopic structure of tissues and organs of animals with emphasis on vertebrates. Fall.

471 Evolution (3:3:0). Prerequisite BIOL 311 or permission of instructor. Study of process of evolution with emphasis on the role of genetics, the properties of populations, and population differentiations. Spring.

474 Plant Structure and Function (4:4:0). Prerequisite BIOL 383 or permission of instructor. Corequisite BIOL 475. Structural and functional aspects of transport phenomena, photosynthesis, growth differentiation, and reproductive processes in plants are discussed. Spring.


495, 496 Special Readings in Biology (1-2:0:0), (1-2:0:0). Prerequisite Permission of instructor and permission of chair. Literature investigation under instructor's guidance. Mastery of subject determined by examination or paper. Total credits may not exceed two.

497, 498 Special Problems in Biology (1-4:0:0), (1-4:0:0). Prerequisite Permission of instructor; permission of chair, 84 hours. Lab or field project leading to a written report of the research. The research and paper are completed under the instructor’s guidance. Total credit for 495, 496, 497, 498, in any combination, is six hours, not to exceed four credits in any one semester.

504 Virginia Natural History for Teachers (4:3:3). Interrelations of plants, wildlife, soil, and waters of local environments with emphasis on teaching their proper use and conservation. May be applied to the M.S. in biology in the interpretive track only and then within a six-hour maximum if combined with BIOL 605.

513 (531) Food, Energy, and Insects (3:3:0). Prerequisite BIOL 332, permission of instructor. History and future of man’s competition with insects in fields of agriculture and medicine.


520 Systematics in Complex Angiosperm Families (3:1:6). Prerequisites BIOL 344 or 534 or permission of instructor. Morphology and systematics of a selected group of more complex flowering families such as Poaceae, Cyperaceae, and Asteraceae. Lab emphasizes identification of specimens and acquaintance with taxonomic literature.

523 (623) Reproductive Strategies (3:3:0). Prerequisite permission of instructor. Evolution of reproductive tactics, including sexual and asexual reproduction, sex ratios, parental investment, propagule sizes and numbers, mating systems and social structure. Animals and plants emphasized as appropriate.

526 Paleoecology (4:3:3). Prerequisite Permission of instructor. Study of origin and evolution of interrelationships between components of the earth’s major ecosystems.

527 (727) Current Problems in Evolutionary Theory (3:3:0). Prerequisite Course in evolution or permission of instructor. Course on contemporary evolutionary thought.

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

532 (632) Animal Behavior (3:3:0). Prerequisite BIOL 324 or permission of instructor. Study of the ecological aspects of animal behavior.

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

534 Speciation and Field Studies in Flowering Plants (3:1:6). Prerequisite Course in plant taxonomy or permission of instructor. Modes of speciation in flowering plants. Lab emphasizes field trips, collection, preparation, and identification of plants.

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

536 Ichthyology (4:3:3). Prerequisite Course in ecology or permission of instructor. Study of the systematics, evolution, physiology, ecology, and behavior of fishes.

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

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

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

543 (644) Tropical Ecosystems (4:3:3). Prerequisite Course in ecology or permission of instructor. 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 required as part of lab.

546 (646) Estuarine and Coastal Ecology (4:3:3). Prerequisite Course in ecology and permission of instructor. Emphasizes marine biology of estuaries 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.

547 (647) Terrestrial Plant Ecology (4:3:3). Prerequisite 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.

553 Advanced Topics in Immunology (3:3:0). Prerequisite BIOL 452 or permission of instructor. A comprehensive study of immunologic mechanisms as they pertain to immunologic diseases and transplantation.

556 Microbial Physiology and Metabolism (3:3:0). Prerequisite BIOL 363 or permission of instructor. 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). Prerequisite BIOL 363 or permission of instructor. 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). Prerequisite BIOL 383, CHEM 313-314, and permission of instructor. Introduction to techniques involved in electron microscopy and to the interpretation of micrographs.

Undergraduate Catalog 1988-1989
George Mason University

http://catalog.gmu.edu
Course Descriptions

of electron micrographs of plants and animals.

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

563 Virology (3:3:0). Prerequisite BIOL 383 and 311 or permission of instructor. 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 Prerequisite BIOL 563 or permission of instructor. Emphasis on propagation of animal viruses in eymbonated eggs and cell culture, titration of animal viruses and bacteriophage, serological techniques used in virology, and biochemical and biophysical characterization of viruses.

567 (687) Molecular Genetics (3:3:0). Prerequisite BIOL 311 or permission of instructor. Study of molecular structure of genetic material and control of gene expression in viruses, procaryotes, and eucaryotes.

572 Human Genetics (3:3:0). Prerequisite General genetics or permission of instructor. Study of the inheritance of man, emphasizing current problems, including 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). Prerequisite General genetics or permission of instructor. Study of genetic approaches to the problem of eucaryotic development emphasizing current research on the regulation of gene enzyme systems. Fall, even-numbered years.

574 Population Genetics (3:3:0). Prerequisite General genetics or permission of instructor. 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). Prerequisite General genetics or permission of instructor. Different topics in different years. Topics include molecular, developmental, physiological and classical genetics emphasizing current problems and research. May be repeated once with permission of chair. Spring, odd-numbered years.

Business Legal Studies Courses (BULE)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the school (except as general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

301 The Legal Environment of Business (3:3:0). Prerequisite 60 hours including ENGL 101, 102, and ECON 103, 104, or permission of instructor. Legal environment in which business transactions are conducted including the Uniform Commercial Code and selected government regulations.

302 Law and Business Organizations (3:3:0). Prerequisite BULE 301, or permission of instructor. Law of agency, bailments, business organizations, and property.

304 Real Estate Law (3:3:0) (same as REUD 304). Prerequisite BULE 301, or permission of instructor. Basic principles of modern real estate law including classifications of property, types of ownership, acquisition and transfer, leasing, government regulation, and taxation. Emphasis on the real estate sale including the contract of sale.

305 Government Contracting Law (3:3:0). Prerequisite BULE 301 and MGMT 331. A survey of the legal aspects of contracting with the government including formation, administration, modification and termination of government contracts as well as the remedies available to the parties when a breach of contract occurs.

401 Law, Business, and Society (3:3:0). Prerequisite Completion of a 300-400 level BULE course and at least 75 semester hours. Interrelationships between for-profit and not-for-profit organizations and their external political, social, economic, international, and ethical environments along with consideration of the public policy process and issues that arise out of the business environments.

Canadian Studies Courses (CAST)

Public Affairs

300 Introduction to Canada (3:3:0). Prerequisite 24 hours or permission of instructor. A survey of Canadian life from cultural, geographical, historical, political, social, and literary perspectives.

Chemistry Courses (CHEM)

Chemistry

CHEM 211-212 is prerequisite to all other undergraduate chemistry courses except those numbered below 200. (See note 2(b) under Course Numbering at the beginning of Course Descriptions.)

103-104 Chemical Science in a Modern Society (4:3:3)- (4:3:3). Terminal course in chemistry for nonscience and nursing majors. Principles and application of chemistry. Topics include environmental pollution, medicine, synthetics, and earth and marine science. Credit will not be given for both this course and for CHEM 211-212. Not open to students majoring in chemistry. (See note 2(b) under Course Numbering at the beginning of Course Descriptions.)

211-212 General Chemistry (4:3:3)-(4:3:3). Basic facts and principles of chemistry, including atomic and molecular structure, the gas laws, kinetics, equilibrium, electrochemistry, nuclear chemistry, and the properties and uses of the more important elements and their compounds. Students majoring in science, engineering, or mathematics should choose this course. Credit will not be given for both this course and CHEM 103-104. (See note 2(b) under Course Numbering at the beginning of Course Descriptions.)

313-314 Organic Chemistry (3:3:0)-(3:3:0). Prerequisite CHEM 211-212, corequisite for 313: CHEM 315, corequisite for 314: CHEM 318 or 320. The theoretical, synthetic, industrial, and biological aspects of the chemistry of carbon compounds. In the first semester all students take concurrently the same lab, CHEM 315. In the second semester, students may choose either of two accompanying labs, CHEM 318 or 320. Chemistry majors are required to take both. (See note 2(b) under Course Numbering at the beginning of Course Descriptions.)

315 Organic Chemistry Lab I (2:1:3)*. Corequisite CHEM 313. Lab techniques and reactions arranged to accompany CHEM 313. One hour recitation.

318 Organic Chemistry Lab II (2:1:3)*. Prerequisite CHEM 315, corequisite CHEM 314. Continuation of CHEM 315, arranged to accompany CHEM 314. One hour recitation.


*Students planning to graduate under the requirements of a catalog prior to the 1980-81 catalog can apply only one hour credit for this course toward graduation.


322 (222) General and Biochemical Equilibrium (2:2:0). Prerequisite CHEM 211-212; CS 103 or 161 or ENGR 110. Study of
general and biochemical equilibria in gas-phase, ionic, and heterogeneous systems. Topics include gas reactions, polyfunctional acids and bases, complex-ion formation, solubility and free energy relationships, and the use of computer algorithms to solve equilibrium problems.

331 Physical Chemistry I (3:3:0). Prerequisite CHEM 211-212, MATH 113, 114. Prerequisite or corequisite PHYS 341 or 250. CHEM 331 and 332 constitute a year-long survey covering topics including thermodynamics, equilibria, kinetics, solution properties, elementary quantum theory, electrochemistry, atomic and molecular structure, and nuclear chemistry.

332 Physical Chemistry II (3:3:0). Prerequisite CHEM 331. Continuation of CHEM 331.

335 Physical Chemistry for the Life Sciences (3:3:0). Prerequisite CHEM 211-212. Classical topics with emphasis on application to biology and health sciences. Rigorous mathematical approaches to the theory of physicochemical processes are avoided. Topics include gas laws and kinetic theory, structure of solids and liquids, applied thermodynamics, kinetics, and chemical equilibria. Not open to students who have passed CHEM 331. Credit is not allowed toward a major in chemistry.

336 Physical Chemistry Lab I (2:1:3). Prerequisite or corequisite CHEM 331. Quantitative experimental study of physicochemical principles. CHEM 336 and 337 constitute an introduction to the practice and theory of experimental physical chemistry. One hour recitation.

337 Physical Chemistry Lab II (2:1:3). Prerequisite or corequisite CHEM 332. Continuation of CHEM 336. One hour recitation.

341 Fundamental Inorganic Chemistry (3:3:0). Prerequisite CHEM 211-212. Descriptive chemistry including chemical properties, reactions, and reaction mechanisms of inorganic elements and compounds. Topics include main group and transition elements, organometallic compounds, and bioinorganic chemistry.

422 Instrumental Analysis (4:2:6). Prerequisite CHEM 314, 321, 331, or permission of instructor. Application of physicochemical methods to analytical chemistry, i.e., the quantitative study of chemical reactions by the use of modern analytical instrumentation. Introduction to theory and practice of spectroscopy; ultraviolet, visible, and infrared absorption spectroscopy; electrical methods of analysis; gas chromatography; non-aqueous studies; and ion exchange.

441 Properties and Bonding of Inorganic Compounds (3:3:0). Prerequisite CHEM 314, 332, or permission of instructor. Interpretation of physical and chemical properties of inorganic compounds in terms of currently used bonding concepts. Topics include structure and bonding of ionic compounds; covalent bonding involving valence-bond, crystal-field, and molecular-orbital theories; and the stereochemical, electronic, and magnetic properties of elements.


451, 452 Special Projects in Chemistry (2:0-6), (2:0-6). Prerequisites Chemistry major, 84 hours, and permission of department research committee. Introduction to chemical research or development. Includes literature search, conferences, and lab. Written and oral technical reports required.

500 Selected Topics in Modern Chemistry (3:3:0). Topics of interest in biochemistry and in physical, organic, inorganic, and analytical chemistry. Recommended 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. Recommended for teachers of chemistry and general science.

513 (413) Special Topics in Organic Chemistry (3:3:0). Prerequisite CHEM 313-314. Synthetic and mechanistic organic chemistry with emphasis on topics such as heterocyclics, natural products, and biologically active chemicals.

514 Physical Organic Chemistry (3:3:0). Prerequisite CHEM 313-314, or permission of instructor. The principles underlying molecular structures, H-activities, and reaction mechanisms. Topics include valence-bond and molecular-orbital theory, the electronic interpretation of organic reactions, quantitative analytical organic chemistry, stereochemistry, conformational analysis, the kinetics and thermodynamics of organic reactions, and photochemistry.

521 Theory of Analytical Processes (3:3:0). Prerequisite CHEM 422 or permission of instructor. Physicochemical principles and analytical techniques applicable to the analysis of solutions, including activity coefficients, solvation and ionic size, titration curve theory, acidity functions and pH-scales, kinetic analysis, and modern techniques for designing experiments and interpreting data.

523 Selected Topics in Analytical Chemistry (3:3:0). Prerequisite CHEM 422. Principles and applications of currently used methods of analysis. Topics include differential pulse polarography, anodic stripping voltammetry, atomic absorption, fluorescence, emission spectrometry, neutron activation, spectroscopy, and spark source mass spectrometry. Advances and applications to trace metal determinations in environmental samples.

525 Electroanalytical Chemistry (3:3:0). Prerequisite CHEM 422 or permission of instructor. Theory of polarography, stationary-electrode and hydrodynamic voltammetry, chronopotentiometry, chronocoulometry, controlled-potential electrolysis and coulometry at controlled potential, coulometric titration, and a number of related techniques, with emphasis on their applications in analysis and research.

533 Selected Topics in Physical Chemistry (3:3:0). Prerequisites CHEM 331 and 332. Advanced study of topics in physical chemistry, selected from among the areas of thermodynamics, atomic and molecular structure, spectroscopy, and chemical kinetics. Content varies; announced before registration. May be retaken for credit with permission of department.


546 Bioinorganic Chemistry (3:3:0). Prerequisite CHEM 563 or permission of instructor. Survey of the structures, functions, and properties of metal ions in biological systems. Modern inorganic coordination chemistry and the study of metal-ion sites in metalloenzymes and metalloproteins. Enzymatic catalysis, oxygen carriers, electron-transport phenomena, and inorganic model systems.

563, 564 Biochemistry (3:3:0), (3:3:0). Prerequisite CHEM 313, 314. CHEM 563 is prerequisite for CHEM 564. Important biological compounds, viz., proteins, carbohydrates, lipids, nucleic acids, and their interrelations. Previous course in biology recommended.

565 Biochemistry Lab I (2:1:3). Prerequisite or corequisite CHEM 563 (461). Introduction to experimental methods used to study the chemical and physical properties of proteins, carbohydrates, lipids, and nucleic acids. Complements the corresponding lecture course. Designed for those who have had no previous exposure to the specialized techniques used in biochemical research. One hour recitation.

566 Biochemistry Lab II (2:1:3). Prerequisite CHEM 563 and 564. Continuation of CHEM 565. One hour recitation.

567 Protein Biochemistry (3:3:0). Prerequisite CHEM 563, 564 or permission of instructor. Topics include the structural, transport, and immunological roles of proteins with emphasis on role of proteins as biological catalysts. Current theories of enzymes catalysis as well as pertinent experimental techniques. Important structural proteins from muscle and connective tissue as well as free and membrane-bound transport proteins.

Chinese Courses (CHIN)

Foreign Languages and Literatures

101 Elementary Chinese (3:3:1). Introduction to Mandarin, including basic grammar, oral expression, listening comprehension.

http://catalog.gmu.edu
156 Course Descriptions

reading and writing. Language lab is an integral part of the course.


201 Intermediate Chinese I (3:3:1). Prerequisite CHIN 102 or equivalent. Further development of skills acquired in CHIN 101-102, including grammar, oral expression, listening comprehension, reading, and writing. Three classroom hours and one laboratory hour per week. CHIN 201 and 202 must be taken in sequence. Lab work required.

202 Intermediate Chinese II (3:3:1). Prerequisite CHIN 201 or equivalent. Continuation of CHIN 201. Lab work required.

Classics Courses (CLAS)

Foreign Languages and Literatures

250 Classical Myths and Legends (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Myths and legends of Greece and Rome, with illustration of their role in classical and modern literature and art. Course work in English. May be taken to fulfill general requirement in literature for baccalaureate degrees.

300 Homer and Greek Tragedy (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. The Iliad and Odyssey and selected plays by Aeschylus, Sophocles, and Euripides. Discussion of the social setting of both types of literature. Course work in English. May be taken to fulfill general requirement in literature for baccalaureate degrees.

Communication Courses (COMM)

Communication

100 Introduction to Communication (3:3:0). Students will gain an understanding of the elements affecting speech communication at each level: intrapersonal, interpersonal, small group, organizational, intercultural, public and mass communication. Effective listening and critical evaluation of persuasive messages will be stressed, as well as techniques for self-monitoring to improve speaker skills in communication.

101 Introduction to Interpersonal Communication (3:3:0). Principles involved in communicating in interpersonal relationships with the primary focus upon dyadic and nonpresentational group situations. Skill development appropriate to these settings will be emphasized.

110 Introduction to Oral Interpretation (3:3:0). Principles involved in the oral communication of the written word from writer, to reader, to audience. Practice in oral communication of prose, poetry, and drama.

120 Introduction to Public Speaking (3:3:0). Principles and types of public speaking; emphasis on informing and persuading. Intensive practice in composition and presentation.

130 Introduction to Small Group Discussion (3:3:0). Emphasizes the development of presentialntal ability in a group, decision-making group maintenance, and leadership and participant skills. Preliminary study of group dynamics.

140 Forensics Seminar in Creative Arts (1:0:6). Prerequisite Audition. Intensive work in creative forensics events — rhetorical criticism, epidemic speech, informative speaking, persuasive speaking, extemporaneous speaking, after-dinner speaking, and impromptu speaking. May be taken four times.

141 Forensics Seminar in Re-creative Arts (1:0:6). Prerequisite Audition. Intensive work in re-creative forensics events — dramatic duet, mixed interpretation, poetry interpretation, dramatic pairs, original poetry, and prose interpretation. May be taken four times.

142 Forensics Seminar in Debate: Affirmative Strategies (1:0:6). Work in affirmative research, case construction, and oral presentation, directed toward affirmative analysis of the intercollegiate debate proposition. May be taken four times.

143 Forensics Seminar in Debate: Negative Strategies (1:0:6). Work in negative research, case attacks, and oral presentation directed toward negative analysis of the intercollegiate debate proposition. May be taken four times.

145 Newspaper Workshop I (1:1:2). Prerequisite Broadside staff position or permission of instructor. Practical experience in writing, editing, or business aspects of newspaper production, at Broadside or other papers, coordinated by the newspaper faculty adviser. May be repeated for a total of three semester hours.

146 Yearbook Workshop I (1:1:2). Prerequisite COMM 100 or equivalent and permission of instructor. Practical experience in photography, layout, production writing, and sales for the University yearbook, coordinated by the yearbook faculty adviser. May be repeated for a total of three semester hours.

148 Radio Workshop I (1:1:2). Prerequisite 100-level COMM course or permission of instructor. Practical experience in production, newswriting, promotions, advertising, public relations, programming, or newscasting for the student radio station, WGMU. May be repeated for a total of three credits.

150 Communication Skills for International Students (3:3:0). Prerequisite International student status in first year of study in the U.S. or permission of instructor. Development of communication skills required to cope effectively with life in American society. Introduction to speaking, listening and nonverbal skills required to communicate appropriately in university study. Students become acquainted with U.S. media, and understand U.S. social, political, economic, and religious values and customs. Does not fulfill general education requirements met by COMM 100, 101, 110, 120 or 130.

203 Introduction to Journalism (3:3:0). American journalism including components in journalism history and the First Amendment, the role of the professional journalist, print and broadcast news operations, the economics of newspaper publishing and other topics. The course serves both as a starting point for those desiring to pursue further journalism studies and an orientation for the news consumer interested in learning more about how the news business operates.


230 Case Studies in Persuasion (3:3:0). Case study applications of common persuasive message strategies and approaches. Basic principles of the persuasive process. Case studies include advertisements, speeches, and individuals involved in persuasive activities from all segments of society.


261 Theories of Argumentation (3:3:0). Critical analysis of argument within communicative settings with emphasis upon deductive and inductive forms of reasoning, fallacies in reasoning, tests of evidence, and the models for such analysis.

300 Foundations of Public Communication (3:3:0). Prerequisite 3 hours of 100- or 200-level COMM credit, or 54 hours. Theories and principles of public communication with emphasis upon methods of persuasion, propaganda, speaker/listener alignments, in the public setting, and measurements of effective public communication. Spring.

301 Foundations of Interpersonal Communication (3:3:0). Prerequisite 3 hours of 100- or 200-level COMM credit, or 54 hours. Theories and principles of interpersonal communication with emphasis upon models of communication, verbal and nonverbal message systems, and analysis of communicative relationships. Fall.

302 Foundations of Mass Communication (3:3:0). Prerequisite 3 hours of 100- or 200-level COMM credit, or 54 hours. Principles of mass communication covering history and development of mass media, external and internal factors affecting the media consumer, characteristics unique to the various forms of mass media, as well as...
Communication 157

studio. Coordinated by the faculty of the Department of Communication. May be repeated for a total of three hours.

358 Electronic Field Production (3:1:3:3). Prerequisite COMM 302 or permission of instructor. Introduction to the techniques, theory, and practice of television field production, including preproduction, production, and postproduction. May be repeated for a total of three hours.

361 Advanced Newswriting and Reporting (3:2:3). Prerequisite COMM 351 or permission of instructor. Advanced reporting course where students engage in actual newsgathering outside the classroom and writing for publication in the University newspaper or other sources.

375 Mass Communication Advertising and Promotions (3:3:3). Prerequisite COMM 302 or permission of instructor. Covers the history, regulation, and ratings of advertising as well as media buying, advertising campaigns, and the strengths and weaknesses of media vehicles used in advertising.

389 Internal and Public Relations Communication for Trade Associations (3:3:3). Prerequisite 54 hours or 3 hours lower-division COMM credit. Principles of editing and journalism as applied to the publication, public relations, and advertising needs within a corporate environment. Job requirement of editorial positions in the fields of public relations publications and information as defined by trade associations, nonprofit organizations, and large corporations.

399 Special Topics in Speech Communication (3:3:3). Prerequisite Permission of instructor. Study of speech communication by topics, such as basis for speech production, Afro-American rhetoric, communication rhetoric. Topics vary and some topics require laboratories. May be repeated with permission of department.

400 Introduction to Research Methods in Communication (3:3:0). Prerequisite 54 hours or permission of instructor. Primary research methodologies used in communication, Rhetorical and experimental-statistical methodologies. Fall.

401 Relational Communication (3:3:3). Prerequisite COMM 301 or permission of instructor. Comprehensive study of the theories and research associated with the development and deterioration of interpersonal relationships. Emphasis on such dimensions as interpersonal needs, norms, rituals, attraction and attribution, intimacy, conflict and conflict resolution, roles, male-female communication, and rhetorical sensitivity.

402 Theories of Mass Communication (3:3:3). Prerequisite 3 hours of COMM credit. Theories of mass communication that have guided the development of mass media. Emphasis on the major scientific and humanistic approaches to the question of mass media effects.


411 Readers Theatre II (3:3:0) Prerequisite COMM 410. Intensive practice in directing and performing group communication of literature.


420 Senior Seminar in Theories of Communicative Interaction (3:3:0). Prerequisite Senior standing and permission of instructor. Primary theories explaining human communicative behavior. Traditional rhetorical theory and contemporary social science theories. Fall, spring.

430 Persuasion (3:3:0). Prerequisite COMM 230 or permission of instructor. Theories of persuasive communication, including traditional and contemporary attitudinal change theories; the relationship between speaker, message, and audience; and the relationship between attitudinal and behavioral change.

431 Information Technology and the Political Process (3:3:0). Prerequisite GOVT 103 or 133, or junior status as a major in communication or permission of instructor. A study of the impact of the information network of wire and wireless communications and computers on the political process in advanced industrial countries. Same as GOVT 431.

434 Interviewing (3:3:0). Prerequisite 54 hours or permission of instructor. Theory, principles, and practical skills essential to the interview process. Emphasis on situations such as the information-gathering interview, the journalistic interview, the employment interview, and the performance-appraisal interview.

450 Internship in Communication (3:1:0). Prerequisite COMM majors, 54 hours and permission of department. On-the-job training in communication through approved field-work study programs. Internships are arranged and supervised by the Department of Communication through an internship coordinator or adviser. May be repeated.

454 Responsible Communication in a Free Society (3:3:0). Prerequisite COMM 300, 302 or permission of instructor. Major issues surrounding the role of speech, press, and electronic media in society. Areas of study include the history of free speech, press issues in society, the place of the government in regulating the marketplace of ideas, and the responsibility of the individual in a free society.

455 History of Print Journalism (3:3:0). Prerequisite 3 hours COMM or HIST credit. Development of print journalism from its inception to the present, with emphasis on the interaction of technology, audience, and government intervention. Topics include birth of the press, development of the modern newspaper and American development, including the Revolutionary and Civil Wars, the rise of the independent press, and the Yellow Journalism period. Same as HIST 455.

456 Comparative Mass Media (3:3:0). Prerequisite COMM 302 or permission of instructor. Major foreign mass media systems as they compare to the American mass media system. Emphasis on comparisons between the American system and the systems of England, France, Germany, and other countries.

460 American Public Address (3:3:0). Prerequisite COMM 300 or permission of instructor. Analysis of religious, political, and social speaking from colonial times to the present. Such speakers as Susan B. Anthony, Jonathan Edwards, Daniel Webster, and others are considered.

465 Topics in Communication and Gender (3:3:0). Prerequisite COMM 400 or permission of instructor. In-depth exploration of selected topics involving gender and communication. Among topics covered may be women in media, women as rhetors, male/female communication, communication and sex roles. Specific interests are examined in a seminar setting. Course may be repeated with department approval.

475 Journalism Law (3:3:0). Prerequisite permission of instructor. Law as it relates to the working journalist. Topics include libel, invasion of privacy, free press/fair trial, First Amendment, broadcast regulation, access to media, and advertising. Extensive use of the "case approach" involving the study of leading court decisions in mass media law.

499 Independent Study in Communication (3:3:0). Prerequisite 54 hours and permission of department. In-depth study of a selected area in public, interpersonal, or mass communication or journalism. The independent study application must be processed before the start of the semester in which the work is to take place. May be repeated.

Communication courses at the 500-level are open to postbac-calaurate students or advanced undergraduates with permission of department.

501 Communication in Professional Relationships (3:3:0). Theoretical perspectives and relevant research related to communication techniques used 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). Prerequisite COMM 301 or permission of instructor. Contemporary theories of interpersonal communication. Analysis of theories, concepts, and approaches to the improvement of interpersonal communication. Includes extensive examination of interpersonal communication research.

504 Communication and Interpersonal Conflict (3:3:0). Prerequisite Admission to Graduate School or senior standing and permission of instructor. Theoretical introduction and experiential learning in the role of communication in conflict management. The
studio. Coordinated by the faculty of the Department of Communication. May be repeated for a total of three hours.

358 Electronic Field Production (3:1:5:3). Prerequisite COMM 302 or permission of instructor. Introduction to the techniques, theory, and practice of television field production, including preproduction, production, and postproduction. May be repeated for a total of three hours.

361 Advanced Newswriting and Reporting (3:2:3). Prerequisite COMM 351 or permission of instructor. Advanced reporting course where students engage in actual newsgathering outside the classroom and writing for publication in the University newspaper or other sources.

375 Mass Communication Advertising and Promotions (3:3:0). Prerequisite COMM 302 or permission of instructor. Covers the history, regulation and ratings of advertising as well as media buying, advertising campaigns, and the strengths and weaknesses of media vehicles used in advertising.

389 Internal and Public Relations Communication for Trade Associations (3:3:0). Prerequisite 54 hours or 3 hours lower-division COMM credit. Principles of editing and journalism as applied to the publication, public relations, and advertising needs within a corporate environment. Job requirement of editorial positions in the fields of public relations publications and information as defined by trade associations, nonprofit organizations, and large corporations.

399 Special Topics in Speech Communication (3:3:0). Prerequisite Permission of instructor. Study of speech communication by topics such as basis for speech production, Afro-American rhetoric, communication reticence. Topics vary and some topics require laboratories. May be repeated with permission of department.

400 Introduction to Research Methods in Communication (3:3:0). Prerequisite 54 hours or permission of instructor. Primary research methodologies used in communication, Rhetorical and experimental-statistical methodologies. Fall.

401 Relational Communication (3:3:0). Prerequisite COMM 301 or permission of instructor. Comprehensive study of the theories and research associated with the development and deterioration of interpersonal relationships. Emphasis on such dimensions as interpersonal needs, norms, rituals, attraction and attribution, intimacy, conflict and conflict resolution, roles, male-female communication, and rhetorical sensitivity.

402 Theories of Mass Communication (3:3:0). Prerequisite 3 hours of COMM credit. Theories of mass communication that have guided the development of mass media. Emphasis on the major scientific and humanistic approaches to the question of mass media effects.


420 Senior Seminar in Theories of Communicative Interaction (3:3:0). Prerequisite Senior standing and acceptance into the communication major or permission of instructor. Primary theories explaining human communicative behavior. Traditional rhetorical theory and contemporary social science theories. Fall, spring.

430 Persuasion (3:3:0). Prerequisite COMM 230 or permission of instructor. Theories of persuasive communication, including traditional and contemporary attitude change theories; the relationship between speaker, message, and audience; and the relationship between attitudinal field-intensity and personal communication. Fall, spring.

431 Information Technology and the Political Process (3:3:0). Prerequisite GOVT 103 or 133, or junior status as a major in communication or permission of instructor. A study of the impact of the information network of wire and wireless communications and computers on the political process in advanced industrial countries. Same as GOVT 431.

434 Interviewing (3:3:0). Prerequisite 54 hours or permission of instructor. Theory, principles, and practical skills essential to the interview process. Emphasis on situations such as the information-gathering interview, the journalistic interview, the employment interview, and the performance-appraisal interview.

450 Internship in Communication (3:1:0). Prerequisite COMM majors. 54 hours and permission of department. On-the-job training in communication through advanced field-industry work study programs. Internships are arranged and supervised by the Department of Communication through an internship coordinator or adviser. May be repeated.

454 Responsible Communication in a Free Society (3:3:0). Prerequisite COMM 300, 302 or permission of instructor. Major issues surrounding the role of speech, press, and electronic media in society. Areas of study include the history of free speech; press issues in society, the place of the government in regulating the marketplace of ideas, and the responsibility of the individual in a free society.

455 History of Print Journalism (3:3:0). Prerequisite 3 hours COMM or HIST credit. Development of print journalism from its inception to the present, with emphasis on the interaction of technology, audience, and government intervention. Topics include birth of the press, development of the modern newspaper and American development, including the Revolutionary and Civil Wars, the rise of the independent press, and the Yellow Journalism period. Same as HIST 455.

456 Comparative Mass Media (3:3:0). Prerequisite COMM 302 or permission of instructor. Major foreign mass media systems as they compare to the American mass media system. Emphasis on comparisons between the American system and the systems of England, France, Germany, and other countries.

460 American Public Address (3:3:0). Prerequisite COMM 300 or permission of instructor. Analysis of religious, political, and social speaking from colonial times to the present. Such speakers as Susan B. Anthony, Jonathan Edwards, Daniel Webster, and others are considered.

465 Topics in Communication and Gender (3:3:0). Prerequisite COMM 400 or permission of instructor. In-depth exploration of selected topics involving gender and communication. Among topics covered may be women in media, women as rhetors, male-female communication, communication and sex roles. Specific interests are examined in a seminar setting. Course may be repeated with department approval.

475 Journalism Law (3:3:0). Prerequisite permission of instructor. Law as it relates to the working journalist. Topics include libel, invasion of privacy, free press/press fair trial, First Amendment, broadcast regulation, libel and advertising. Extensive use of the "case approach" involving the study of leading court decisions in mass media law.

499 Independent Study in Communication (3:0:0). Prerequisite 54 hours and permission of department. In-depth study of a selected area in public, interpersonal, or mass communication or journalism. The independent study application must be processed before the start of the semester in which the work is to take place. May be repeated.

Communication courses at the 500-level are open to postbaccalaureate students or advanced undergraduates with permission of department.

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). Prerequisite COMM 301 or permission of instructor. Contemporary theories of interpersonal communication. Analysis of theories, concepts, and applications to the interpersonal channel of interpersonal communication. Includes extensive examination of interpersonal communication research.

504 Communication and Interpersonal Conflict (3:3:0). Prerequisite Admission to Graduate School or senior standing and permission of instructor. Theoretical introduction and experiential learning in the role of communication in conflict management. The
focus is upon interpersonal interactions, including dyadic and small-group levels in various settings such as friendships, marriage, family, and the workplace. The course examines the factors that 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 include 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). Analysis of communication variables as they relate to organizational and managerial functions within international organizations. Focus on interpersonal aspects of government and business relations both inside the United States and with foreign visitors in the United States, 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 on 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 credit 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; focuses on learning the theory and application of the theory to relevant setting.

531 Approaches to Group Facilitation (3:3:0). Introduces various theoretical and practical approaches to group facilitation with in-depth focus and practice with one approach. Students participate in group sessions, analyze videotapes of decision-making groups, and practice methodologies for facilitating group interaction.

535 Organizational Communication (3:3:0). 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). Prerequisite COMM 335. Investigation of theories providing the foundation for communication consulting. Designed to provide both the theoretical information and the mechanisms for application necessary to modify communicative behavior within organizations.

540 Directing Forensics Programs in Individual Events (3:3:0). 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.

542 Directing Debate Activities (3:3:0). Theory and practice of competitive debate. Emphasis on traditional and contemporary theories of debate, administrative activities related to the direction of a debate program, and methods of instruction in debate, including analysis of current debate topic. Designed for both novice and experienced debate coaches.

543 Advanced Debate Theory (3:3:0). Prerequisite Prior debate and/or debate coaching experience or permission of instructor. 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). Prerequisite 84 hours. Examination of both verbal and nonverbal elements that produce meaning among teachers and students, and communication theories and skills needed to manage the communicative environment in the classroom. Nonverbal aspects of space, time, action, and form are considered as they affect 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). Prerequisite 84 hours. Speaking and listening skills that 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.

555 Theories of Telecommunications Production (3:3:0). Prerequisite Master of Arts in Independent Study (MAIS) approval or permission of instructor. Study of theories of telecommunications production involving computers, computer graphics, television cameras, computerized editing, audio mixing, and the panoply of other production tools available for electronic communication. This course will explore the problems of fitting messages to the various media including the aesthetic demands of products imposed by new technologies.

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 credit with permission of department.

596 Directed Readings and Research (1-3:0:1-3). Prerequisite Permission of department. 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). Prerequisite Permission of department. Media or creative production activities, under the direction of a faculty member. A written report and an oral examination may be required. Course may be repeated for a maximum of six credits.

Comparative Literature Courses (CL)

English

300 Introduction to Comparative Literature (3:3:0). Prerequisite Junior standing and intermediate proficiency in a foreign language. Introduction to the methods of comparative literature through the study, in translation, of a selected theme or motif as it appears in various periods, genres, or national literatures. Readings are drawn chiefly from English, American, or European literature; on occasion, non-Western literatures will be featured. Students are encouraged to work with texts in the foreign language of their concentration; other texts will be studied in translation.

500 Theories of Comparative Literature (3:3:0). Prerequisite CL 300 and senior standing or permission of instructor. An intensive study of the major theories of comparative literature with special emphasis on international movements and their characteristic themes. Students will work with texts in the foreign language of their concentration; other texts will be studied in translation.

Computer Science Courses (CS)

Computer Science

Knowledge of high school algebra is a prerequisite for all computer science courses.

103 (formerly 261) Introduction to Computing (3:3:0). Prerequisite Knowledge of high school algebra. Introduction to computers and computer programming, including the organization of a computer system, the design and use of computer software, and the types and organization of data. Topics include the use of a computing system and the study and use of a high-level programming language (FORTRAN). This course is intended for noncomputer science majors; credit for this course does not count toward the requirements for a major in computer science.
Students who have received credit for CS 261 or CS 111 may not receive credit for this course.

112 Computer Science I (4:3:1). Prerequisite Second year of high school algebra. Introduction to computer science for majors and others with a serious interest in computer science. Topics include an overview of computer system hardware and organization, problem-solving methods and algorithm development, program structures, abstract data types, simple data and file structures, introduction to analysis of algorithmic complexity and program correctness, and applications development in a high-level programming language which supports modular design.

161 Introduction to a Programming Language (1:1:0). Introduction to basic concepts of a computer language and its applications (e.g., computer graphics, expert systems, data base management packages).

211 Computer Science II (3:3:0). Prerequisite Grade of C or better in CS 112. Continuation of the instruction in algorithmic development, procedural and data abstraction, and algorithmic complexity begun in CS 112. Topics will include abstract data types and data structures (sets, files, strings, linked lists, stacks, queues, trees, graphs) and examples of their applications, with continued emphasis on program development which will be reinforced through several larger programming projects. Additional programming language instruction will supplement the major topics of this course.

262 Introduction to Computer Statistical Packages (3:3:0). Prerequisite CS 161 and a course in statistics. Use of computer packages in the statistical analysis of data. Topics include data entry, checking and manipulation, as well as the use of computer statistical packages for analysis, and analysis of variance.

311 Assembly Language Programming (3:3:0). Prerequisite Grade of C or better in CS 211. Symbolic assembly language and computer structures: arithmetic and logical operations; machine representations of numbers, characters, and instructions; input-output and data conversions; addressing techniques; assembler directives; subroutine linkage; macroprocessing.

312 (formerly 212) Computer Science III (3:3:0). Prerequisite Grade of C or better in CS 211. Math 305 is a suggested corequisite. Additional examples of tree and graph algorithms, sorting, searching, string processing and an introduction to resource management, such as memory, time, processors. Continued emphasis on abstract data types, algorithmic strategies, and program verification and complexity. Additional topics may include logic programming, proof of correctness, and development of parallel algorithms. Credit for both CS 212 and CS 312 will not be given.

321 Automata and Formal Languages (3:3:0). Prerequisite CS 211 and MATH 305. Theory of formal languages, grammars, and abstract computing machines, Chomsky’s hierarchies of grammars and languages, transducers and acceptors, deterministic and nondon deterministic machines. Regular expressions and context-free grammars and their application in the design of software, such as compilers and text processors.

363 Comparative Programming Languages (3:3:0). Prerequisite CS 311. Key programming mechanisms, described independently of particular machines or languages, including control, binding, procedural abstraction, types. Systematic survey of capabilities of diverse high-level languages.

365 Computer Systems Architecture (3:3:0). Prerequisite CS 311 and ENGR 301. Computer hardware organization, software structure, and data organization. Students complete a term project involving simulating one computer system on another.

370 Introduction to File Processing (3:3:0). Prerequisite CS 311. File organization methods and access methods for secondary storage; examination of sequential and direct file structure on tapes and direct access devices.

421 Introduction to Software Engineering (3:3:0). Prerequisite CS 311. Techniques in software design and development. Discussion of formal models of structured programming, software engineering methods and tools, top-down design and documentation. Students organize, manage, and develop a software engineering project, working in teams.


440 Language Processors (3:3:0). Prerequisite MATH 305, CS 312, 311. Survey of basic programming language processors: assemblers, interpreters, and compilers. Topics include design and construction of language processors, formal syntactic definition methods, parsing techniques, and code generation techniques.


451 Computer Graphics and Software Design (3:3:0). Prerequisite CS 211 and MATH or ENGR 311. Graphics devices and line generation, 2D computer graphics, graphics packages, raster graphics, programming project including designing a menu-driven system.

455 Data Communications Systems (3:3:0). Prerequisite CS 365. Data base systems, data communication systems. Topics include the role of exchanges, concentrators, multiplexers, buffering; network analysis, cost and design; software consideration.

468 Computer System Programming (3:3:0). Prerequisite CS 312, 311. Assemblers, compilers, system structures, operating systems, and machine architecture.


480 Introduction to Artificial Intelligence (3:3:0). Prerequisite CS 312 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.

483 (465) Data Structures and Analysis of Algorithms (3:3:0). Prerequisite CS 312, MATH 305. Math necessary to properly analyze the computational effort of a given algorithm. Specific algorithms analyzed and improved.

498 Independent Study in Computer Science (1-3:0:0). Prerequisite 54 hours, major in computer science, and permission of instructor. Research and analysis of selected problems or topics in computer science. Must be arranged with an instructor and approved by the department chairman before registering. May be repeated for a maximum of six credits if the subject matters are substantially different.

499 Special Topics in Computer Science (3:3:0). Prerequisite 54 hours and permission of instructor: specific prerequisites vary with nature of topic. Topics of special interest to undergraduates are offered. May be repeated for a maximum of six credits if the subject matters are substantially different.

Dance Courses (DANC)

Performing Arts

101 Dance Appreciation (3:3:0). Introduction to dance as a cultural art form. Elements of dance examined separately and combined in various dance forms. A brief survey of the basic forms leads to a more intensive study of modern and the new dance. Criticism and evaluation are stressed.

125 Beginning Modern Dance (3:3:0). Designed to develop knowledge, skills, and an appreciation of modern dance through the presentation of fundamental techniques and creative movement experiences.
125 Beginning Intermediate Modern Dance (3:3:0). Prerequisite DANC 125 or permission of instructor. Designed to further develop the knowledge, skills and appreciation of modern dance through the continued exploration of techniques, aesthetics, and creativity.

127 Contemporary Dance I (3:3:0). Prerequisite Permission of instructor (for majors only). Beginning technique course in modern dance designed specifically to meet the professional needs of students who have declared, or are seriously considering, a major in dance. May be repeated once for credit.

131 Beginning Jazz Technique (3:3:0). Prerequisite DANC 125 suggested. Mechanics of movement in the jazz style of dance. Emphasis on development of techniques for jazz training. May be repeated once for credit.

141 Beginning Ballet I (3:3:0). Introduction to the elements of ballet technique and vocabulary. Stress upon learning the elementary positions and movements characteristic of this highly stylized art form. May be repeated once for credit.

142 Beginning Intermediate Ballet I (3:3:0). Prerequisite DANC 141 or permission of instructor. Further development of knowledge, skills, and appreciation through the technique, vocabulary, and history of ballet.


161 Beginning Tap Dance (3:3:0). Elementary exploration into the rhythms and steps basic to the art form of tap dancing.

224 Intermediate Modern Dance (3:3:0). Prerequisite DANC 126 or permission of instructor. Continued exploration in movement and motion to further develop technical ability in dance. Emphasis on increased ability in technical training and performance skills. May be taken four times for credit.

231 Intermediate Jazz Technique (3:3:0). Prerequisite DANC 131 or permission of instructor. Continued study of movement in the jazz style of dance. May be taken four times.

241 Intermediate Ballet II (3:3:0). Prerequisite DANC 141 or permission of instructor. Continued training at the intermediate level. Emphasis on increasing technical proficiency and aesthetic awareness. May be taken four times.

251 Dance Composition I (3:3:0). Prerequisite DANC 125 or permission of instructor. Introduction to basic principles for composing movement for dance. Emphasis on simple compositional forms in dance as they apply to the solo performer.

252 Dance Composition II (3:3:0). Prerequisite DANC 251 or permission of instructor. Further exploration of the elements of compositional forms in dance as they apply to group forms. Emphasis in composing and performing duets, trios, quartets, and mass pieces.

305 Dynamic Alignment (3:3:0). Prerequisite 6 hours of DANC; course work in anatomy and biology recommended. Aspects of anatomy and kinesiology that directly apply to the correct development of dance technique. Emphasis on use of exercise corrective strategies and imagery to correct insufficient muscle patterns and reduce stress upon the body.

313 Rhythmic Analysis and Music Resources for Dance (3:3:0). Prerequisite Fundamentals of Music or 6 hours prior work in dance, or permission of instructor. Rhythmic structure of music for dance is examined through example, analytical methods and compositional procedures. Music resources include study of forms and styles from the medieval period through the twentieth century.

314 Music Accompaniment for Dance (3:3:0). Prerequisite DANC 313 or permission of instructor. Lecture/practice course designed to give to both dance and music students practical experience in dance accompaniment primarily through the use of percussion instruments. Students use their knowledge of music and rhythm to accompany and enhance a dance technique class.

327 Advanced Modern Dance (3:6:0). Prerequisite DANC 224 or permission of instructor. Continued training for advanced students. Emphasis on attainment of high quality technical and performing skills. May be taken eight times.

341 Advanced Ballet (3:3:0). Prerequisite DANC 241 or permission of instructor. Performance/lab dealing with ballet at the advanced level. Emphasis on attainment of high-quality technical and performance skills. May be taken eight times and.

350 Advanced Dance Improvisation (3:3:0). Prerequisite DANC 125, 126, and 150, or permission of instructor. Lecture/performance course for continued study of dance improvisation. Each student is responsible for creating and directing advanced problems in dance improvisation.

60 Choreography (3:3:0). Prerequisite DANC 252 or permission of instructor. Students learn to choreograph a dance work. Students are responsible for auditioning dancers, costumeing, staging, lighting, selecting musical accompaniment, and composing original movement material.

370 Dance Performance (3:3:0). Prerequisite Permission of instructor. Practical experience in performance, production, and/or repertory through participation in University dance productions or special guest artist programs. May be taken four times.

390, 391 Dance History (3:3:0). Prerequisite DANC 101 or 6 hours of DANC. History of dance chronicling its growth and development through the twentieth century. Emphasis on the social, cultural, and philosophical factors shaping the progress of dance in successive historical periods.

420 Special Topics in Dance (3:3:0). Prerequisite 9 hours of DANC or permission of instructor. In-depth presentation and exploration of topical studies in dance and/or related study areas, e.g., dance as therapy, avant-garde dance, philosophic approach to twentieth-century dance artists, cinedance. Topic depends on instructor. May be taken twice.

454 Teaching Principles of Modern Dance (3:3:0). Prerequisite 6 hours of dance technique and DANC 305. Provides advanced dance students with the methods, principles, and background knowledge for teaching modern dance. Students are expected to apply knowledge gained from previous courses in technique and alignment in the demonstration of their ability to teach a modern dance class.

510 Independent Study (3:0:0). Prerequisite DANCE major with 84 hours, graduate standing in dance or theater, or permission of instructor. Individual research or a creative project in close consultation with an instructor. Project selected from performance, choreography, technical theater as it applies to dance, management, dance history, or criticism.

Decision Sciences Courses (DESC)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the School of Business Administration (except general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

200 Statistical Analysis for Decision Making I (3:3:0). Prerequisite CS 161 and MATH 108 are recommended. Frequency distributions, probability, probability distributions, decision theory, sampling distributions, estimation. Students who have received credit for MATH 256 or 351 may not receive credit for this course.


301 Decision Models in Business and Operations Management (3:3:0). Prerequisite 108, DESC 202. Examination of the principal functions of operations managers in various settings. Analytic models are used to describe key planning and control activities in both product and service industries. Linear programming, service systems, network analysis, simulation, inventory models, quality control, forecasting, work measurement, and layout models are introduced as tools for effective management. Extensive use will be made of the computers as a problem-solving aid.

http://catalog.gmu.edu
320 Logistics Systems Management (3:3:0). Prerequisite DESC 301. Consideration of design, planning, and development of logistics systems with emphasis on the various logistics activities required throughout the system/product life cycle. Topics include development of concepts and factors in system design, test and evaluation, production/construction, operational support, and system retirement/disposal.

341 Logistics Systems Support Analysis (3:3:0). Prerequisites DESC 301 and either DESC 320 or MKTG 310. Application of analytical techniques to logistics systems planning and management. Emphasis is on evaluation factors and methods, and their impact on logistics systems. Topics include logistics modeling, cost-effectiveness analysis, maintenance analysis, and other representative techniques.


353 Intermediate Applied Statistics for Management (3:3:0). Prerequisite DESC 202. Several of the more advanced statistical methodologies and their importance in business application, including survey sampling, experimental design, multiple regression, and correlation. Techniques are applied to areas such as marketing, personnel, accounting, auditing, and finance. Use of computer packages for analysis.

354 Decision Theory and Networks (3:3:0). Prerequisite DESC 301. Study of the systematic evaluation of alternative actions as a basis for choice among them. Analytic techniques such as tree diagrams, Bayesian inference, and network models (e.g., CPM and PERT), are to be used extensively. The techniques as presented will be applied to a wide range of business problems; included in the problem analysis will be the use of the case method and microcomputer software for both decision analysis and project management.

355 Cases in Management Science and Operations Management (3:3:0). Prerequisite Senior standing suggested. Management science techniques and operations management concepts are applied to solve business problems. Case methodology requires identifying and structuring complex problems and performing appropriate analyses. Emphasis will be on drawing useful conclusions and supporting recommendations made in report to management. Term project and microcomputer applications of cases.

435 Computer Simulation (3:3:0). Prerequisite DESC 353. Introduction to the basic concepts of simulating complex systems by computer. Topics covered include Monte Carlo methods, discrete-event modeling, a specialized simulation language, and the statistics of input and output analysis.

451 Optimization Models (3:3:0). Prerequisite DESC 352. Examination of optimization models as applied to business problems. Both linear and nonlinear models are considered, including dynamic, integer, and goal programming. Applications to management, finance, and marketing.

452 Forecasting Methods for Management (3:3:0). Prerequisite DESC 202. Introduction to forecasting, examining alternative models and their application to a variety of business applications. Topics include trend analysis, moving averages, exponential smoothing, adaptive models, multiple regression and correlation, time series analysis.

456 Quality Planning and Control (3:3:0). Prerequisite DESC 301. Development of the basic concepts and procedures associated with a quality control system. Extensive use is made of modeling and statistical inference in monitoring and evaluating pollution and quality control functions. Emphasis is placed on the management aspect of the quality control system. Both microcomputer and cases are employed.

459 Advanced Topics in Applied Business Statistics (3:3:0). Prerequisite DESC 353 or permission of instructor. Advanced study of selected topics in statistics with applications to business problems and decisions. Potential topics to cover developments in business statistics, including contemporary research findings and case studies, that would not normally be covered in other available applied business statistics courses.

461 Advanced Operations Management (3:3:0) (formerly MGM 461). Prerequisite ACCT 202, MGM 301, and DESC 301. Advanced study of selected topics in the management of operations in manufacturing and service industries. Examination of integrated systems of production and contemporary topics of automation, technological change, and group technology. Cases and group project are used to complement lectures.

463 Seminar in Operations Management (3:3:0). Prerequisite DESC 301. 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 problems.

491 Seminar in Decision Sciences (3:3:0). Prerequisite Completion of all other required courses for a major in decision sciences, or permission of instructor. Topics covering developments in the decision sciences field, including contemporary research findings and case studies of decision sciences in business and other organizations.

492 Field Experience in Decision Sciences (3:3:0). Prerequisite Senior standing and permission of instructor. This educationally relevant, faculty-governed field experience gives students an opportunity to become involved in addressing actual challenges encountered by Northern Virginia businesses. Working through the Entrepreneurship Center, each client firm will be matched with a team of students assigned to propose action relating to a major problem or opportunity faced by the company.

499 Independent Study in Decision Sciences (1-3:3:0). Prerequisite DESC majors with at least 9 upper-level credit hours including at least one course beyond DESC 301. Research proposal arranged with instructor and approved by the department chair. Investigation of a business problem according to individual interest, utilizing state-of-the-art decision science methodology.

Economics Courses (ECON)

Economics

Individual courses taken for credit under their former numbers may not be taken again for credit under their present numbers.

103 Contemporary Economic Principles and Issues I (3:3:0). (May be taken after ECON 104). Introduction to microeconomics in the context of current problems. Explores how the market mechanism allocates scarce resources among competing uses; uses basic tools of supply and demand and production and distribution theory to analyze diverse problems.


306 Intermediate Microeconomics (3:3:0). Prerequisite ECON 103 and 104, MATH 108 or 113. Basic factors of price and distribution theory; including analysis of demand, costs of production and supply relationships, and price and output determination under various market structures.

309 Economic Problems and Public Policies (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. Important economic problems in light of current and proposed public policies.

310 Money and Banking (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. Monetary, commercial, and central banking systems, with particular emphasis on relationship with American government programs, fiscal policies and controls.

311 Intermediate Macroeconomics (3:3:0). Prerequisites ECON 103 and 104 or permission of instructor. Aggregate economic accounts, including the measurement of national income; determinants of levels of income and output; and causes and solutions for problems of unemployment, inflation, and economic growth.

316 Economic Growth and Business Cycle (3:3:0). Prerequisite ECON 310 or 311 or permission of instructor. Factors contributing
to sustained economic growth with additional emphasis on business fluctuations and their measurement.

320 Labor Problems (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. American labor unions and their effect upon society. Causes of and proposed solutions to selected problems.

321 Economics of Labor (3:3:0). Prerequisite ECON 306. Factors that determine levels of wages and employment and economic consequences. Attention is directed to recent developments in unionism, collective bargaining, and industrial technology.

322 Economics of Income Distribution (3:3:0). Prerequisites ECON 103 and 104. Theoretical models of functional and personal distribution of income with emphasis upon human capital welfare considerations and screening, and other aspects of income.

330 Public Finance (3:3:0). Prerequisite ECON 306 or permission of instructor. Intergovernmental financial relationships; types, incidences, and consequences of taxation; other sources of governmental income; governmental expenditures and their effect; public economic enterprises; public borrowing; debt management and its economic effect.

340 Introduction to Mathematical Economics (3:3:0). Prerequisite ECON 306 and 311 and MATH 113 and 114, or permission of instructor. Mathematical treatment of the theory of firm and household behavior, stabilization policy, growth theory, input-output analysis, and linear programming.

345 Introduction to Econometrics (3:3:0). Prerequisites ECON 306 and 311, DESC 200 and DESC 202. Modern statistical techniques in estimating economic relations.

350 Regional and Urban Economics (3:3:0). Prerequisite ECON 306 or permission of instructor. Regional development and metropolitan growth, including locational decisions of households and firms and problems associated with high-density urban economic activity.

360 Economics of Developing Areas (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. Economic growth characteristic of developing countries, economic development, obstacles to development, policies and planning.

361 Economic Development of Latin America (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. Economic development of institutions and problems of Latin America.

365 Topics in Economic History (3:3:0). Prerequisite ECON 103 and 104. Topics vary exemplifying ancient, medieval, modern European, and American economic history, using econometric analysis as necessary. May be repeated once for credit with permission of instructor.

370 Economics of Industrial Organization (3:3:0). Prerequisite ECON 306 or permission of instructor. Factors influencing industrial structure and industrial conduct and performance.

375 Economics of Transportation (3:3:0). Prerequisite ECON 103 and 104. Transportation industry in the U.S. Structure modes and economic problems of the competing types of transportation.

380 Comparative Economic Systems (3:3:0). Prerequisite ECON 103 and 104 or permission of instructor. Theory, programs, and practices of economic systems, including capitalism, socialism, and fascism.

385 Soviet Economic System (3:3:0). Prerequisite ECON 306, or ECON 103 and permission of instructor. General survey of the Soviet economic system and its institutions including historical and ideological background. Selected topics following the survey include analysis of Soviet agriculture, foreign economic relations, consumption, and defense expenditure.

390 International Economics (3:3:0). Prerequisite ECON 306 or permission of instructor. Foreign exchange market, balance of payment, foreign trade policies, and theories of international trade.

403 Austrian Economics (3:3:0). Prerequisite ECON 306 and 311. Microeconomic and macroeconomic models and the misallocation of resources. Alternative economic tools from the unique a priori and subjectivist approach of noted Austrian economists.

410 Public Choice (3:3:0). Prerequisite ECON 306. Application of economic theory and methodology to the study of nonmarket decision making.

412 Game Theory and Economics of Institutions (3:3:0). Prerequisite 306 or permission of instructor. Introduction to game theory and its relevance for the analysis of the framework of rules and institutions within which economic processes occur. Application of game theoretical concepts to a comparative analysis of the causes and effects of alternative institutional arrangements.

481 The Development of Economic Thought (3:3:0). Prerequisite ECON 306 and 311 or permission of instructor. Developments in economic thought from 1500 to the present. Emphasis on historical origins, impact on contemporary economics, and theoretical validity.

496 Special Topics in Economics (3:3:0). Prerequisite ECON 306, 311, or permission of instructor. Subject matter varies. May be repeated for credit.

497 Economic Research Workshop (3:3:0). Prerequisite ECON 306 and 311, DESC 200 and 202. Individual research project proposed by instructor or in conjunction with other departmental courses, including research design, data collection, use of program packages, data processing, and analysis culminating in the preparation of a substantial paper.

498 Seminar in Economics (3:3:0). Prerequisite ECON 306 and 311 and permission of instructor. Current economic problems studied and discussed in seminar form.

499 Independent Study (1-3:0-0). Prerequisite Open only to economics majors with 84 hours and permission of department and permission of instructor. Individual study of a selected area of economics. Directed research paper required.

Education Courses (EDUC)

Curriculum and instruction

Courses numbered through the 400 series constitute the undergraduate program. Courses in the 300 series are open to all undergraduates. The 400 series, with the exception of EDUC 490, is open only to students admitted to a Teacher Education Program. Students may not receive degree credit for more than one of the comparable courses relating to early and middle education. For example, students taking EDUC 407 may not receive degree credit for EDUC 408.

Undergraduates may enroll in graduate courses only after completing all the upper-level undergraduate courses relevant to their educational objectives and upon demonstrating a level of maturity required for graduate level courses. In these circumstances undergraduates may, with the written permission of the course instructor and the chair of the department offering the course, register for graduate courses (those numbered 500) and apply the credit earned toward the undergraduate degree.

Undergraduate students electing this option must have completed all prerequisite hours and courses for the graduate course in which they wish to enroll.

302 Human Growth and Development (3:3:0). Examines human development through the life span with special emphasis on the cognitive language, physical, social, and emotional development of children. Contemporary theories of human development and their relevance to educational practice will be emphasized. Field experience required.

305 Children's Literature (3:3:0). Prerequisite 9 hours of English. The historical development of children's literature is examined. Examine the role of illustration, the literary representation of children, and the social contexts in which children's literature is created. Field experience required.

306 Teaching Language Arts in the Elementary School (3:3:0). Prerequisite 54 hours and EDUC 305. Recommended corequisite EDUC 403 or 404. Study of the process and practice of teaching the language arts, and materials involved in the teaching of language arts in the elementary school. Field experience required.

http://catalog.gmu.edu
308 History and Philosophy of Technical Education (3:3:0). Introduction to the historical and philosophical background of technical education and its effect upon the industrial and business community. Includes an overview presentation of vocational offerings in all phases of secondary and postsecondary education with an analysis of future technology changes and their technical implications for education and the worker.

311 Introduction to Early and Middle Education (1:1:0). Introduces early and middle education majors to the teaching profession through an examination of the nature of the American schools, the student's potential contributions to the profession, and the nuts and bolts of today's schools. Field experiences are required. (Open also to students in music, health, and physical education.)

320 Introduction to Tests and Measurements (3:3:0). Introduces basic principles, techniques, and tenets used in the quantification of measuring devices. Interpretation of standardized tests. Emphasis on construction and interpretation of measuring devices used in the classroom.

322 Essential Elements for Early and Middle Education (2:2:0). Introduction to BTAP competencies with an emphasis on those related to planning, classroom management, and discipline. Methods to be studied will be appropriate for teaching all elementary school subjects. Field experiences required.

324 Utilization of Instructional Media and Technology (3:3:0). An experiential study of the utilization of instructional media, equipment, and emerging technologies as applied in the classroom. Primary focus on the student's competence relevant to equipment operations.

340 Microcomputer and Elementary School Mathematics (3:3:0). Prerequisite Mathematics Competency Examination. Introductory course in the utilization and programming of microcomputers in elementary school mathematics. The primary programming language is BASIC. Application of microcomputers to the solution of consumer mathematics problems will be made.

344 Problem Solving in School Mathematics (3:3:0). Prerequisite Permission of Instructor. Students will learn how to solve problems in logic, geometry, algebra, and number theory using heuristics based on the work of G. Polya.

359 Industrial Arts for the Elementary School (3:3:0). Designed for teachers who want to use construction activities as a teaching method for reinforcing the elementary school curriculum. Students use the same tools, materials, and activities as children to develop psychomotor skills and study technology.

364 Graphics Technology (3:0:3). Project and experiments are used to study aspects of graphics, drawing, photography, reproduction printing, and modern technology in communications.

365 Manufacturing Technology (3:0:3). Combines experiences of manufacturing technology with appropriate teaching techniques. Organizational techniques, project, and activities from several resources are tried and adapted by class members for use in teaching manufacturing.

366 Construction Technology (3:0:3). Study of the practical application of materials and processes in building residential and commercial structures. Topics include designing, framing, and assembling buildings. The skill areas covered will include carpentry, masonry, concrete, roofing, finishing, and practical laboratory experiences associated with current construction techniques and will stress teaching methodologies.

367 Power and Transportation Technology (3:0:3). Overview of the field of power and transportation industries. Combines technical experiences involving engines, power sources, and controls with appropriate teaching techniques. Projects are developed, experiments performed, and revisions made with power devices or vehicles.

369 Career Guidance and Counseling in Vocational Education (3:3:0). Study of industrial technology related to trade and industrial courses offered in secondary schools. Includes industrial field trips, group discussion, and investigation of current industrial practices. Field experience required.

370 Wood Technology (3:0:3). Emphasis on basic skills and fundamental knowledge needed to teach woodworking. Materials, processes, techniques, occupations, and problems of the woodworking industry are studied via lecture-demonstrations, product analysis planning, and actual construction of project.

371 Metal Technology (3:0:3). Emphasis on basic skills and fundamental knowledge needed to teach metalworking. Materials, processes, techniques, occupations, and problems of the metals industry via lecture-demonstrations, product analysis planning, and actual construction of project.

372 Plastic Technology (3:0:3). Emphasis on basic skills and fundamental knowledge needed to teach plastics technology. Materials, processes, techniques, occupations, and problems of the plastic industry are studied via lecture-demonstration, product analysis planning, and actual construction of project.

373 Electricity/Electronics Technology I (3:0:3). Laboratory course with emphasis on acquisition of basic skills and fundamental knowledge needed to teach electricity and electronics. The components, processes, techniques, concepts, occupations, and problems of modern electrical/electronic technology will be studied via lecture-demonstrations, experimentation, product analysis planning, and actual construction of project. Safe, effective instrument operation, tool utilization, and teaching strategies will be stressed throughout the course.

374 Drafting Technology (3:0:3). Emphasis on fundamental knowledge and skills needed to teach drafting. Equipment, techniques, occupations, and types of drawings typical in modern technical drawing are studied via lecture-demonstrations, exercises, and completion of mechanical drawings and sketches.

377 Electronics Technology II (3:3:0). A laboratory course with emphasis on acquisition of skills needed to teach electronics technology. Concepts and principles of electronic and digital logic circuits and systems will be studied via lecture-demonstrations, experimentation, and construction of project. Safe, effective instrument operation, tool utilization, and teaching strategies will be stressed throughout the course. Suggest corequisite EDUC 373.

386 Construction Technology: Energy Systems (3:3:0). Study of the practical application of energy systems in residential and commercial construction. Topics include design, installation, servicing, and analyzing of systems involving plumbing, electrical wiring, motors, climate control, communications and mechanical functions. The course provides practical laboratory experiences associated with current installation and maintenance technologies and stresses techniques for teaching these technologies.

400 Inservice Educational Development (2-6:0:0). Prerequisite Employment in a professional capacity by sponsoring school division or educational agency, acceptability to the University, or permission of department. Offered upon request of a school division or other educational agency, or upon establishment of a need on the part of a group of educational personnel. Provides an opportunity for instruction in various educational areas, such as learning theory, curriculum, evaluation, materials, media, teaching, and study. The course may take any form appropriate to the area involved to include practice and workshops. May be repeated. If applicable to a specific degree program, may be accepted toward a degree by the University.

401 Teaching Thinking Skills. Introductory training in selected strategies for teaching thinking in grades 4-8. Students study and apply a range of methods and materials for providing systematic, developmental learning of basic thinking processes and skills. Field experiences required.

402 Teaching and Learning in Nursery School and Kindergarten (1:1:0). Study of the processes, programs, materials and methods involved in teaching the nursery school and kindergarten child. Emphasizes meeting the educational needs and unique learning styles of young children in relation to developmental needs of the whole child. Field experiences in a preschool or kindergarten are required.

403 Developmental Reading for Early Education (3:3:0). Prerequisite EDUC 300, 302, 313; admission to the Teacher Education Program. Prerequisite or corequisite EDUC 305. Study of the theory, methods, practices, and materials involved in the teaching of reading at the nursery school, kindergarten, and grades 1-4 levels. Includes study of reading readiness abilities, readiness for reading at the primary level, word analysis and word recognition skills, vocabulary development, reading comprehension and critical reading, reading skills in content fields, and study
skills. Emphasis is placed on lifetime reading habits for all students including below-level readers, beginning readers, the gifted, and multicultural and bilingual readers. Field experience in public schools required.

404 Developmental Reading for Middle School (3:3:0). Prerequisite EDUC 300, 302, 313: admission to the Teacher Education Program. Prerequisite or corequisite EDUC 305. Study of reading in grades 4-8, including word analysis and word recognition skills in content fields, adaptive rates of reading, study and interpretive reading skills. Emphasis is placed on lifetime reading habits for all students including below-level readers, the gifted, multicultural and bilingual readers. Includes an understanding of the reading curricula in early education. Field experience in public schools required.

407 Diagnostic Reading for Early Education (3:3:0). Prerequisite EDUC 403: admission to Teacher Education Program. Study of theory, methods, practices, and materials involved in the diagnostic teaching of reading in nursery school, kindergarten, and grades 1-4. Includes techniques for evaluation, diagnostic techniques available, differentiation of instruction to fit individual capabilities, and corrective methods. Field experience required.

408 Diagnostic Reading for Middle Education (3:3:0). Prerequisite EDUC 404: admission to Teacher Education Program. Review of theory, methods, practices, and materials involved in the teaching of reading skills in grades 4-8. Includes techniques for evaluation, formal and informal diagnostics, corrective methods and differentiation of instruction, and understanding of study skills and utilization of media. Field experience required.

411 Teaching Mathematics in the Elementary School (3:3:0). Prerequisite MATH 371: admission to Teacher Education Program. Study of theory, methods, practices and materials involved in teaching mathematics in the elementary school. Lab and discovery techniques emphasized for practical application of fundamental math concepts and reinforcement. Field experience required.

412 Teaching Social Studies and Humanities in the Elementary School (3:3:0). Prerequisite 12 hours of social science and admission to Teacher Education Program. Study of theory, processes, methods, practices, and materials involved in teaching the social studies and humanities (art and music) in the elementary school. Emphasis on modern approaches to social studies teaching with emphasis on planning units of instruction which integrate art and music activities. Field experience required.

413 Teaching Science in the Elementary School (3:3:0). Prerequisite Admission to Teacher Education Program and completion of two of the required lab sciences. Emphasis on theories, practices, methods, materials and resources necessary to teach the sciences in the elementary school. Emphasis on relationship of child to environment, leading to the development of basic good in science. Includes "hands-on" work in the biological, physical, and earth sciences. Field experience required.

417 Student Teaching in Vocational Education (9:12:0). Prerequisite Completion of all courses in the approved program; admission to, and good standing in, the Teacher Education Program. An intensive, supervised clinical experience of a full semester in approved schools in Virginia, and a seminar series taught on campus by University faculty/supervisors. Experiences in both middle and secondary school settings.

418 Student Teaching in Music Education (9:9:0). Prerequisite Completion of requirements for admission to the music education concentration; admission to, and good standing in, the Teacher Education Program. An intensive, supervised clinical experience in approved schools in Virginia, and appropriate supplemental course work dependent upon the student's area of concentration (vocal/choral or instrumental). Experiences in elementary and/or secondary school settings.

429 Junior Student Teaching in Early Education (6:0:0). Prerequisite Admission to, and good standing in, the Teacher Education Program. Intensive clinical experience in an approved school in Virginia. Experiences in kindergarten and grades 1, 2, 3, or 4 must be included.

430 Junior Student Teaching in Middle Education (6:0:0). Prerequisite Admission to, and good standing in, the Teacher Education Program. Intensive clinical experience in an approved school in Virginia. Experiences in grades 4, 5, 6, 7 and 8.

431 Student Teaching in Early Education (9:15:0:0). Prerequisite Completion of all courses in the approved program: admission to, and good standing in, the Teacher Education Program. An intensive clinical experience of a full semester in an approved school in Virginia and a seminar series conducted on campus by University faculty supervisors. Experiences in kindergarten and grades 1, 2, 3, or 4 must be included.

432 Student Teaching in Middle Education (9:15:0:0). Prerequisite Completion of all courses in the approved program and admission to and good standing in the Teacher Education Program. An intensive clinical experience of a full semester in an approved school in Virginia, and a seminar series conducted on campus by University faculty supervisors. Experiences in grades 4, 5, 6, 7, or 8.

438 Vocational Education, Trade Area Technical Certification (30 semester hours). Prerequisite Teacher of vocational education. Advanced placement credit given to vocational teachers for certain teaching experience, completion of approved competency testing programs, or technical in-service training. Requests for approved credit must be submitted to the Office of Vocational Education and students must meet University admission requirements.

439 Internship in Vocational Education (3:3:0) or (6:0:0). Prerequisite Admission to Teacher Education Program. Opportunity to meet the work experience requirement and state certification requirement in trade and industrial education and to work in industry or at a technical occupation.

440, 441, 442 Independent Study in Education (1-3:0:0). Prerequisite Admission to Teacher Education Program and permission of chair and permission of instructor. Students repeating the course register for EDUC 441 or 442, as appropriate. By arrangement. Various subjects, principally by directed study, discussion, and research. Subject areas include elementary science, reading, the slow learner, mathematics, English, social studies, arts and crafts, health, secondary science, language arts, child growth and development, the culturally deprived, music, learning disabilities, guidance, the mentally retarded, and social foundations.

460 Organizing and Counseling Vocational Youth Groups (3:3:0). Prerequisite Admission to Teacher Education Program. Prepares the student to organize, manage and advise school chapters of vocational youth groups. Emphasis on methods of making youth groups an integral part of the instructional program. The goals, activities, and contributions of youth groups are studied as students work with or observe actual chapters executing typical events. Field experience required.

463 Vocational and Technical Teaching Methods (3:3:0). Prerequisite Admission to Teacher Education Program. Emphasis on methods of teaching industrial arts: unit methods, group method, line production, seminar, demonstration, and project method. Students complete activities in each method and provide instructions to others. Content developed through lab activities. Work completed is evaluated in relation to goals and student needs.

465 Practicum in Laboratory Technology. Each student will be placed in an exemplary program under a master teacher. Students will perform the duties required of all vocational teachers except the actual presentation of lessons. Emphasis will be placed on developing instructional methodology, project, experiments, and evaluation instruments that can be used to teach technological literacy in the secondary schools.

466 Competency-Based Instruction in Trade and Industrial Education (3:3:0). Prerequisite Admission to Teacher Education Program. Combines practical and theoretical components of the competency-based programs in trade and industrial education in Virginia with methods and strategies for implementation. Field experiences required.

467 Curriculum Development in Technical Education (3:3:0). Prerequisite Acceptance into Teacher Education Program. Principles of instructional methods as applied to technical education; preparation of lesson plans and courses of study; demonstration teaching in lab environment; curriculum construction emphasizing high-technology changes; classroom
management techniques including competency-based instructional systems.

469 Vocational and Technical Facility Management (3:0:3). Students plan and organize lab facilities for instruction. Systems for personnel, tool storage, supply purchase, maintenance, and recordkeeping are developed and tested. Selected labs are examined and recommendations are made for improvement of organization, management, or safety.

490 Selected Topics in Education (1-3:0:0). Examines special topics in education of interest to students, faculty, and the educational community. Topics vary. No more than 6 hours from EDUC 490, 440, 441, and 442 may be applied to the degree.

500 In-Service Educational Development (1-6:0:0). Prerequisite: 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). Prerequisite: Admission to Graduate School or permission of instructor. 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). Prerequisite: Admission to Graduate School or permission of instructor. 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). Overview of national systems of education from the perspective of their similarities 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). Prerequisite: Graduate standing in the Education Department or permission of instructor. 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 continuity, 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 Education (3:3:0). Helps students develop an awareness of self and self-concept, learn communication skills for improving interpersonal relations, and create a nondiscriminatory school environment.

509 Human Development: Infancy to Middle Childhood (2:2:0). 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). 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 practicality 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). Prerequisite: Completion of undergraduate degree or appropriate educational requirement. 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.

521 Foundations of Education (2:2:0). Prerequisite: Graduate standing in the Education Department or permission of instructor. Overview of the various ways of educating and of the socialization processes operating within American educational institutions and other organizations. Current educational practices analyzed in terms of history, philosophy, psychology, and sociocultural factors of formal and informal learning. Emphasis on trends, issues, and alternative futures.

522 Introduction to Secondary Education (3:3:0). Prerequisite: Admission to Graduate School or permission of department. Analysis of the philosophical assumptions, curriculum issues, learning theories, and history associated with current teaching styles. Emphasis on applications to all disciplines taught in secondary schools. Current educational trends and issues examined in relation to the sociology of secondary school settings. Field experiences in public schools required.

523 The Exceptional Child in American Education (2:2:0). Prerequisite: Graduate standing in the department or permission of instructor. 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). Prerequisite: Admission to the Graduate School or permission of instructor. Examination of the relationship between 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). Examination of cultural pluralism in American education, with a focus on the nature of linguistic and cultural diversity in public schools, including 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). 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, and educational aptitude. Emphasis on the relationship between development and learning.

532 Bilingualism and Language Acquisition Research (3:3:0). Examination of research in first and second language acquisition, including the interaction of a bilingual's two languages, with implications for the classroom.

565 Production of Instructional Materials (3:3:0). Prerequisite: 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 with current issues and trends.

579 School Psychologist Practicum (3:0:0). Prerequisite: Admission to the Graduate School. 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). Prerequisite: Completion of proper undergraduate requirements in vocational education for industrial cooperative instructors. Prepares teachers to develop curriculum material 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). Introduction to practical and theoretical components of the competency-based programs in vocational education in Virginia. Includes 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 (ICT)-(COE) (3:3:0). Prerequisite: Completion of undergraduate requirements in vocational education for industrial cooperative instructors. Prepares teachers to develop and select cooperative work stations. Teachers will gain proficiency in
planning and working with advisory groups. Course includes 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). Advanced laboratory course centering on the implementation of new technological methods of manufacturing and testing materials and product. Students will build, research, and test individual products and ideas including the strategies required 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). Introduction to practical and applied aspects of statistics in education. Includes selected descriptive and inferential statistics, also statistical data processing.

593 (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). Prerequisite Admission to a degree program and permission of department. Various subjects and projects, principally by directed study, discussion, research, and participation under the supervision of a member of the graduate faculty. May be repeated. No more than 6 hours of EDUC 500, 598 (may also be listed as EDAS, EDGC, EDRD, or EDSE), and/or 600 may be applied to degree credit.

Elementary/Secondary (EDCI)

Curriculum and Instruction

500 — See EDUC 500.

507 Internship in Applied Linguistics (3:0:3). Prerequisite Graduate standing in the Curriculum and Instruction or English Department and EDUC 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 (ESL) 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 required for students without previous teaching or administrative experience at the pre-elementary levels.

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). Prerequisite Admission to and completion of all additional course work in the secondary education certification program, admission to and good standing in the Teacher Education program, and 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 required.

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 (ESL).

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 (ESL) 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 Microcomputer in BASIC for Instructional Applications (3:3:0). 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). Prerequisite EDUC 530 or permission of instructor. 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 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 required for those seeking initial teacher certification. Fall semester only.


Course Descriptions

Electrical and Computer Engineering (ECE)

Electrical and Computer Engineering

240 Introduction to Microcomputer Applications (3:3:0).
Introduction to hardware and software fundamentals of a typical microcomputer system. Topics include programming techniques, hardware considerations in various research applications, case study of microcomputer implementation, computer graphics, real-time man-machine interaction, word processors, and how to choose a microcomputer system. (Not intended for those majoring in computer and electronics engineering.)

Prerequisite CS 111 or 112. Corequisite: MATH 213 and PHYS 350. Circuit applications of Ohm's and Kirchhoff's Laws, superposition, equivalent circuits, power and energy relations, RLC circuits, transient and steady state analysis.

286 Electric Circuit Analysis II (3:3:3).
Prerequisite ECE 285. Corequisite MATH 304. Principles of linear circuit analysis dealing with the frequency domain. Topics include sinusoidal excitation and phasors, AC steady state analysis and power, complex frequency and network functions, frequency response, transformers, two-port networks, state variable analysis, Fourier methods and Laplace transforms.

301 Digital Electronics (3:2:2).
Introduction to digital systems, circuits, and computers. Topics include binary systems and codes, digital logic gates and circuits, microelectronics and integrated circuits, coding and multiplexing, multivibrators, shift registers, counters, A/D converters, elementary computer architecture. (Not intended for those majoring in computer and electronics engineering.)

302 Electronics (4:3:3).
Prerequisite PHYS 342 or 351 or permission of instructor. Lecture and laboratory course in electronics, semiconductor physics, electronic devices and circuits, feedback, design and operational characteristics of power supplies, amplifiers and oscillators. (Not intended for those majoring in computer and electronics engineering.)

305 Electromagnetic Theory (3:3:0).
Prerequisite PHYS 352 and MATH 304. Static and time varying electric and magnetic fields, dielectrics, magnetization, Maxwell's Equations, introduction to transmission lines. This course uses vector calculus and complex algebra.

331 Digital System Design (3:3:0).
Prerequisite ECE 285. Principles of digital logic and system design. Topics include number systems; logic fundamentals; simplification of Boolean functions; combinational logic; synchronous and asynchronous sequential logic; flip-flops, registers, counters, memory and arithmetic circuits; digital system design case studies; and elementary computer architecture. ECE 332 is normally taken concurrently with ECE 331. Credit may not be received for ECE 301 and 331.

332 Digital Electronics and Logic Design Lab (1:0:3).
Prerequisite PHYS 351 or permission of instructor; corequisite ECE 331. Lab associated with ECE 331.

333 Linear Electronics I (3:3:0).
Prerequisite ECE 286 or PHYS 352 or equivalent. ECE 334 is normally taken concurrently with 333. Credit may not be received for ECE 302 and ECE 333. Principles of operation and application of electron devices and linear circuits. Topics include semiconductor properties, diodes, bipolar and field effect transistors, integrated circuits, amplifiers, feedback concepts, operational amplifiers and analog design.

334 Linear Electronics Lab I (1:0:3).
Prerequisite PHYS 351 or permission of instructor; corequisite ECE 333. Lab associated with ECE 334.

360 Basic Signal and System Analysis (3:3:0).

421 Classical Systems and Control Theory (3:3:0).
Prerequisite ECE 360 or permission of instructor. Introduction to the analysis and synthesis of feedback systems. Functional description of linear and nonlinear systems. Block diagrams and signal flow graphs. State-space representation of dynamical systems. Frequency response methods. Root Locus, Nyquist and other stability criteria. Performance indices and error criteria. Applications to mechanical and electromechanical control systems.

Prerequisite ECE 421. Introduction to the analysis and design of digital control systems, Z-transform, discrete linear systems, frequency domain and state variable techniques. Use of microcomputers in control systems.

429 Control Systems Lab (1:0:3).
Prerequisite ECE 421; corequisite ECE 422. Laboratory experiments for topics in control systems analysis, design, and implementation with an emphasis on the use of microcomputers.

430 Principles of Semiconductor Devices (3:3:0).
Prerequisite MATH 304, ECE 305, ECE 333 or 302, or permission of instructor; corequisite MATH 313. Introduction to solid state physics and its application to semiconductors and semiconductor devices. Topics include band theory, doping, p-n junctions, diffusion theory, low frequency circuits, devices including bipolar transistor, MOSFET, CMOS, photo transistors.

431 Digital Circuit Design (3:3:0).
Prerequisite ECE 305, 331, 333. Analysis and design of discrete and integrated switching circuits. Topics include the transient characteristics of diodes, bipolar, and field-effect transistors; MOS and bipolar inverters; nonregenerative and regenerative circuits; TTL, ECL, ICL, NMOS, and CMOS technologies; semiconductor memories; VLSI design principles; and SPICE circuit analysis.

433 Linear Electronics II (3:3:0).
Prerequisite ECE 305, 333. ECE 434 is normally taken concurrently. A second course in linear electronics covering the following topics: power amplifiers, feedback amplifier frequency response, operational amplifier systems, oscillators, wide band and microwave amplifiers, and computer aided design.

434 Linear Electronics II Laboratory (1:0:3).
Prerequisite ECE 334. ECE 433 is normally taken concurrently. A second lab course in linear electronics involving analysis and design of the topics listed in ECE 433.

435 Digital Circuit Design Laboratory (1:0:3).
Corequisite ECE 431. Lab experiments for topics covered in ECE 431.

442 Digital Computer Design and Interfacing (3:3:0).
Prerequisite ECE 445 or equivalent. Design of digital computers, microprocessor systems, and interfacing techniques. Digital logic circuits, flow diagrams, memory systems, I/O equipment.


449 Computer Design Lab (1:0:3).
Prerequisite ECE 445. Laboratory course providing experience in the design and fabrication of a digital computer. Included is the specification of a computer system and the fabrication of (1) a multichip random access memory, (2) an arithmetic and logic unit, (3) memory and computer registers, (4) input/output circuits, and (5) a control unit. The above entities are then combined to form a simple computer. Medium-scale integrated circuitry is utilized.

450 Introduction to Robotics (3:3:0).
Prerequisite ECE 360. Introduction to robotic manipulator systems. Topics include an overview of manipulation tasks and automation requirements: actuators, sensors, and computer interfaces; feedback control; elements of computer vision; and real-time programming languages. Design projects will be conceived, simulated, and tested by the students.

451, 452 Energy Conversion I, II (4:3:3), (4:3:3).
Prerequisite ECE 306 or permission of instructor. Study of energy needs, sources, conversion, and use. Electric power generation, transmission and use. Electromechanical, electromagnetic, nuclear, and nonconventional energy conversion and transmission


461 Communication Engineering Laboratory (1:0:3). Prerequisite ECE 460. Lab experiments for the topics from analog and digital communication covered in ECE 460.

462 Data and Computer Communications (3:3:0). Prerequisite ECE 460. Introduction to modern data and computer communications system. Topics include transmission links, modern and codec designs, packet switching, computer networks and protocol satellite broadcasting, optical-fiber wideband local area networks, data link control, multiplexing concentrator design, error-control coding, examples of computer networks.

463 Digital Communications Systems (3:3:0). Prerequisite ECE 460. Introduction to digital transmission systems. Topics include quantization, digital coding of analog waveforms, PCM, DPCM, baseband transmission, digital modulation schemes, ASK, FSK, PSK, QAM, pulse shaping, intersymbol interference, partial response, voice-band and wideband modems, digital cable systems, repeaters, clock recovery and jitter, multipath fading, digital radio design, optimal receiver design, MAP receiver, probability of error.

490 Advanced Design Project (3:3:0). Prerequisite B4 hours in ECE program. A design project to be conceived, designed, constructed (as appropriate), and tested. Final oral and written reports are required at the completion of the project.

491 Engineering Seminar (1:1:0). Prerequisite B4 hours in ECE program. Engineering ethics, professionalism, the role of the engineer in society, current topics, employment opportunities.

498 Independent Study in Electrical and Computer Engineering (1-3:0:0). Directed self-study of special topics of current interest in ECE. Must be arranged with an instructor and approved by the department chair before registering. Can be taken for a maximum of three credit hours.

511 Microprocessors (3:3:0). Prerequisite ECE 445 or equivalent. Introduction to microprocessor architecture and structure. Logic design, microcomputer bus structure. Microcomputer memory. Microcomputer 1/0, interrupt, DMA, interface. Microcomputer development systems. Applications examples. Introduction to 16-bit microprocessors. Includes a project involving hands-on experience with microcomputer systems.

512 Real-Time Microprocessor Systems (3:3:0). Prerequisite ECE 421 and 511 or equivalent. Real-time microprocessor systems with emphasis on control, interfacing techniques, real-time operating systems, and related applications. Topics include basic input-output, interfacing the peripheral analog circuitry, operating systems, programming techniques, process control with microcomputers, and microcomputers for communications. Course includes a simulation and design project.

513 Applied Electromagnetic Theory (3:3:0). Prerequisite ECE 305, MATH 313 or equivalent. Maxwell's Equations, electromagnetic wave propagation, guided waves, transmission lines, radiation and antennas.

516 Advanced Microprocessors (3:3:0). Prerequisite ECE 511 or equivalent. 16-bit and 32-bit microprocessors. Detailed study of the Intel 8086 and Motorola 68000 families (up to 80386 and MC68020). Auxiliary chips of the above families, microcomputers, and applications. Brief coverage of NS32000, Z8000, Z80000, AT&T WES32100, NEC V70, V7I, DEC MicroVAX 78032. Course includes a lab project and demonstration involving the Intel 8086 and MC68000 systems.

520 Electronic Systems Analysis (3:3:0). Prerequisite ECE 333. Study of electronic circuits from a systems viewpoint. Topics consist of the analog building block circuits used in system design including operational amplifiers, voltage regulators, video amplifiers, oscillators, modulators, phase-locked loops, multiplexers, active filters, A/D and D/A converters, and optoelectronic circuits.


528 Random Processes in Electrical and Computer Engineering (3:3:0). Prerequisite ECE 360 and MATH 351 or equivalent. Topics include random signals and noise in communications, stationary and ergodic random processes, spectral analysis, Gaussian processes, Brownian motion, random estimation, Kalman and adaptive filtering, Markov processes, and Poisson processes. Applications are drawn from computer, communication, control, and signal processing.

530 Digital Signal Processing (3:3:0). Prerequisite ECE 360 and ECE 528 or permission of instructor. Representation analysis and design of digital signals and systems. Sampling and quantization. Z-transform and Discrete Fourier Transform algorithms. Spectrum analysis. Additional topics may include adaptive filtering, homomorphic digital signal processing, digital interpolation and decimation, VLSI signal processors.

542 Computer Network Architectures and Protocols (3:3:0). Prerequisite Graduate standing or permission of instructor. Introduction to the architectures and protocols of computer networks and the concept of packet switching. Topics include ISO standard layer model, physical interfaces and protocols, data link control, multiaccess techniques, packet switching, routing and flow control, network topology, data communication subsystems, error control codings, local area network, satellite packet broadcasting, packet radio, interconnection of packet-switching networks, network security and privacy, various examples of computer networks.

546 Parallel Computer Architectures (3:3:0). Prerequisite ECE 445. Study of computation schemata, Petri nets, parallel floating point operations, instruction handling techniques, pipeline systems, functional parallelism, memory organization, arbitration and deadlock, pipeline computer architecture, massive parallelism.

565 Introduction to Optical Electronics (3:3:0). Prerequisite ECE 305, and either ECE 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 nonimaging; optical data storage techniques and optical signal processing; optical communications.

567 Optical Fiber Communications (3:3:0). Prerequisite ECE 305, 331, 333, and MATH 313. Study of the components and integration of fiber-optic transmission systems. Topics include optical fibers, signal degradation, optical sources, power launching and coupling, photo detectors, receiver circuits, link analysis, and optical measurements.

571 Network Analysis (3:3:0). Prerequisite ECE 333 or permission of instructor. 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 (3:3:0). Prerequisite ECE 430 or permission of instructor. Study of the theory of semiconductor devices based on solid-state physics. Topics include physics and properties of semiconductors, p-n junction diode, metal-semiconductor contacts, MIS diode and CCD, bipolar and field-effect transistors.

586 Digital Integrated Circuit Analysis and Design (3:3:0). Prerequisite ECE 331, ECE 430 or permission of instructor. A study of the devices and circuit topologies used in digital integrated circuits. Topics include large signal active device models, MOS and BJTs, regenerative logic circuits, semiconductor memories, LSI and VLSI circuits.

587 Analog Integrated Circuit Analysis and Design (3:3:0). Prerequisite ECE 333, ECE 430, or permission of instructor. Study of
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 101</td>
<td>Engineering Fundamentals</td>
<td>(2-2-0). Introduction to engineering profession fundamentals and problem solving. Topics include description of engineering disciplines, functions of the engineer, professionalism, ethics and registration, problem solving and representation of technical information, mechanical drawing, estimation and approximations, analysis and design.</td>
</tr>
<tr>
<td>ENGR 207</td>
<td>Mechanics of Materials</td>
<td>(3-3-0). Prerequisite ENGR 205. Concept of stress, strain, elasticity and plasticity, combined stress, torsion, stresses and deflection of beams, statically indeterminate members, unsymmetrical bending, buckling of columns.</td>
</tr>
<tr>
<td>ENGR 209</td>
<td>Material Science</td>
<td>(3-3-0). Prerequisite CHEM 211. Introduction to microscopic structure of engineering materials and effects on macroscopic properties. Topics: crystalline and amorphous structures, defects, semiconductors, ceramics, metals, and polymers.</td>
</tr>
<tr>
<td>ENGR 210</td>
<td>Thermodynamics</td>
<td>(3-3-0). Prerequisite MATH 213, PHYS 250. Classical concepts of energy and temperature, first and second laws and their application to closed and open thermodynamic systems. Properties of pure substances, equation of state, analysis of thermodynamic processes and systems.</td>
</tr>
<tr>
<td>ENGR 208</td>
<td>ENGR Fluid Mechanics</td>
<td>(3-3-0). Prerequisite ENGR 206. MATH 213. Principles of fluids in equilibrium and in motion. Topics include hydrostatic pressure; continuity, Bernoulli and momentum equations; viscosity flow problems; measuring instruments; and applications to closed conduits and open channels.</td>
</tr>
<tr>
<td>ENGR 211</td>
<td>Mathematical Methods in Physics and Engineering</td>
<td>(3-3-0); (3-3-0). Prerequisites PHYS 352 and MATH 304 or 306 for ENGR (PHYS) 311; ENGR (PHYS) 311 or MATH 313 for ENGR (PHYS) 312). Study of mathematical techniques as applied in physics and engineering. Ordinary and partial differential equations, special functions, Fourier series, Laplace transforms, integral equations, matrices and complex variables.</td>
</tr>
<tr>
<td>ENGR 212</td>
<td>Computer-Aided Design</td>
<td>(3-2-3). Prerequisite ENGR 205, CS 312. Introduction to computer-aided design. Mechanical, architectural, and electronic drafting by computer; graph plotting; 2D and 3D wire-frame drawings; programming of menus; isometric and perspective drawing; color shading; animation; introduction to computer-integrated manufacturing (CIM). The student will write an interactive, menu-driven program for solution of an engineering design problem, with graphical output.</td>
</tr>
<tr>
<td>ENGR 301</td>
<td>Engineering Economy</td>
<td>(3-3-0). Prerequisite ENGR 107 and 205. Introduction to economic decision process in engineering design and analysis. Topics include methodology for selection of alternatives, measures of investment worth, income and cost evaluation, depreciation methods, benefit-cost and cost-effectiveness techniques, and applications of decision trees to capital investment.</td>
</tr>
</tbody>
</table>

### English Courses (ENGL)

#### English

ENGL 101 is the usual prerequisite for ENGL 102. With the permission of department, international students may use ENGL 100 instead of ENGL 101 as the prerequisite for ENGL 102 or ENGL 302. Students may not receive credit for both ENGL 100 and ENGL 101.

100 Composition for Foreign Students (4-4-0). For nonnative speakers of English with limited proficiency in the language. Principles and practice of expository writing with intensive drill in grammar, vocabulary, and principles of organization. Students must attain a minimum grade of C to fulfill degree requirements.

101 Composition and Introduction to Literature (3-3-0); (3-3-0). Prerequisite ENGL 101 (or 100) is prerequisite to ENGL 102. Expository writing, ranging from paragraphs to essays of some length and complexity. Study of the logical, rhetorical, and linguistic structure of expository prose. The methods and conventions of preparing research papers, introduction to analysis and appreciation of major literary types. Students must attain a minimum grade of C to fulfill degree requirements.

3-6 credit hours of 100-level English courses are prerequisite for all 200-level courses; 3 to 6 credit hours of English in 100-level courses and 6 credit hours of English in 200-level courses are prerequisites for all English courses numbered above 302. Any 2 English courses on the 200 level, taken in any order, may be used to fulfill the general education requirement in literature.

203, 204 Western Literary Masterworks (3-3-0); (3-3-0). Great works of Western civilization. 203. Writers such as Homer, Sophocles, Euripides, Dante, Cervantes, Machiavelli, and Montaigne. 204. Writers such as Racine, Molière, Flaubert, Dostoevski, Tolstoy, Mann, Maupassant, Ionesco, and Beckett. All readings in modern English.

205, 206 Readings in English and American Literature (3-3-0); (3-3-0). English and American literature by types. ENGL 205 focuses on selected English and American poetry and drama by such writers as Marlowe, Shakespeare, Shaw, O'Neill, Albee, Donne, Keats, Whitman, Frost, Eliot, and Auden. ENGL 206 focuses on selected English and American novels, short stories, and essays by such writers as Lawrence, Hemingway, Faulkner, Malville, Crane, E. Bronte, Fitzgerald, and Barth.

207, 208 Literature and Society I, II (3-3-0); (3-3-0). Study of the way in which literature has explored questions of continuing primary importance. Works will be selected principally from English and American literature and a variety of genres will be considered. ENGL 207 will address a complex of related issues to be found in such topics as individuality, community, gender, relationships, technology, social conflict, or war as explored in the literature of at least two historical periods before the present. Each section of ENGL 208 will deal intensively with a single topic as represented in the literature of a single historical moment.

251, 252 Survey of English Literature (3-3-0); (3-3-0). Major literary movements and works of English literature, focusing on the writings of such authors as Chaucer, Spenser, Shakespeare, Donne, and others.

253 Survey of American Literature (3-3-0). Major literary movements and works of American literature to 1877, focusing on the writings of such authors as Franklin, Poe, Emerson, Whitman, Hawthorne, Melville, Dickinson, Stowe, and others.

254 Survey of American Literature II (3-3-0). Major literary movements and works of American literature after 1877, focusing...
on such writers as Twain, Chopin, O’Neill, Frost, Faulkner, Stevens, Miller, Olsen, and others.

302 Advanced Composition (3:3:0). Prerequisite Completion of 45 credit hours, 3 credits of composition, 3 hours of literature. Intensive practice in writing and analyzing such expository forms as the essay, article, proposal, and technical or scientific report. The Schedule of Classes designates particular sections of ENGL 302 in the following broad areas: business, humanities, natural sciences, social sciences. ENGL 302 completed with a minimum grade of C fulfills the University composition requirements.

309 Independent Writing (3:3:0). Practice in analyzing and writing such expository forms as the essay, memo, article, and technical and scientific reports, depending upon the needs of the individual student. Not a remedial course.

325 Dimensions of Literature (3:3:0). Intensive study of the basic concepts, questions, and assumptions of the study of literature. All sections will address the study of genre and of literary history. Other issues such as author; region; ethnic, racial and sexual groups; and oral and popular culture will also be addressed in various sections of the course. Open to all majors; required of all English majors.

332 Introduction to Film (3:3:0). Introduction to film medium as an art form. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 300.

333 American Folklore (3:3:0). Topics include folktales, personal narratives, legends, proverbs, jokes, folksongs, folk art, folk craft, and folk architecture. Consideration of ethnicity, community, family, festival, folklore in literature and oral history. Discussion of traditions in students’ own lives. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 330.

334 Literary Approaches to Popular Culture (3:3:0). Emphasis on popular fiction and adaptation of popular prose genres to media which have strong verbal and visual elements. Relationship between verbal and nonverbal elements of such media as film, comics, and radio. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 331.

335, 336 Shakespeare (3:3:0), (3:3:0). Twenty selected plays: first semester emphasizes histories and comedies; second semester, tragedies and romances. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 351, ENGL 352.

337 Myth and Literature (3:3:0). Study of the ways in which traditional mythologies have been reflected in English and American literature as themes, motifs, and patterns.

347, 348, 414, 415 Special Studies in English I, II, III, IV (3:3:0), (3:3:0), (3:3:0), (3:3:0). Prerequisite Permission of department. Seminar sequence primarily, but not exclusively, for candidates for graduation with Distinction and Recognition in English, ordinarily to be taken in order. A systematic consideration of the nature and implications of literary understanding. What is involved in "understanding" a text, an author’s style, a genre? What do we mean by "literary history"? Specific texts and contexts from different periods of English and American literature are studied in order to consider the virtues and limitations of various perspectives on literary experience, and their relation to other areas of humanistic learning.

Special Studies I: A single major work, studied systematically in several different ways. Emphasis on multiple critical perspectives, what each reveals or fails to account for.

Special Studies II: The career of a major author: the gradual assumption of authority, development of themes: -d techniques, interaction of life and work, adjustment of artistic vision to cultural change.

Special Studies III: An interdisciplinary cross-section of a particular historical moment: relations between literature and fine art, theology, philosophy, social and political history, and scientific thought.

Special Studies IV: A single theme or motif traced through many literary periods and in a variety of genres. Literary history as the evolution of the ways fundamental questions have been articulated.

360, 363 Special Topics in Literature (3:3:0), (3:3:0). Study of literature by topics, such as women in literature, science fiction, and literature of the avant garde. Topic changes each time the course is offered. May be repeated with permission of department.

364 Significant Authors (3:3:0). One or two major authors, such as Shakespeare, Dickens, and Hardy, or Tolkien and C. S. Lewis, as announced. May be repeated with permission of department.

366 Jewish American Writers (3:3:0). Major twentieth-century American Jewish writers, including works by such authors as Roth, Singer, Friedman, Malamud, and Bellow. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 383.

367 Literature of the Modern South: 1920 to the Present (3:3:0). Novels, short stories, drama, poetry, and essays of the American South, from post-World War I to recent times; the work of Southern writers, including Faulkner, Warren, Tate, Wright, Porter, McCullers, Styron, and O’Connor. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 384.

368 Literature of Black America (3:3:0). Significant works of poetry, fiction, drama, and autobiography written by American black writers in the twentieth century, reflecting the black experience. Works by such authors as Hughes, Wright, Brooks, Ellison, Baraka, and Bullins. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 386.

369 Women and Literature (3:3:0). An exploration of the experience of women as both authors of and subjects in imaginative literature. May be repeated once for credit when subtitle is different with permission of department.

380 Recent American Fiction (3:3:0). American short story writers and novelists from World War II to the present, with emphasis on Mailer, Barth, Hawkes, Cheever, Oates, Gass, Kosinski, and others.

390 Recent American Poetry (3:3:0). Major American poets from World War II to the present, with emphasis on the work of such poets as Roethke, Wilbur, Dickey, Lowell, Merwin, Kinnell, and Ammons.

397 Introduction to Poetry Writing (3:3:0). Introduction to the theory and practice of poetry writing. Original student work is read and discussed in class and in conferences with the instructor. Includes technical exercises in the craft of poetry and may include reading assignments. Individual students may do some work in fiction or drama, but the course concentrates on poetry.

398 Introduction to Fiction Writing (3:3:0). Introduction to the theory and practice of fiction writing. Original student work is read and discussed in class and in conferences with the instructor. Includes technical exercises in the craft of fiction and may include reading assignments. Individual students may do some work in poetry or drama, but the course concentrates on fiction. (Students who have taken ENGL 396 may not take this course.)

400 Literature of the Middle Ages (3:3:0). Selected English narrative, dramatic and heroic literature written between 1300 and 1500, exclusive of Chaucer. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 342.

401 English Poetry and Prose of the Sixteenth Century (3:3:0). Poetry and prose of the early Renaissance in England. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 345.

402 English Poetry and Prose of the Seventeenth Century (3:3:0). English poetry and prose from 1603 to 1688, excluding Milton. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 354.

404 The Augustan Age (3:3:0). English literature from the late seventeenth century to the middle of the eighteenth century; emphasis on works of Dryden, Swift, and Pope. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 357.

405 The Age of Sensibility (3:3:0). English literature of the later eighteenth century, the time of the American and French revolutions, including new developments in the novel, biography,
and poetry. Emphasis on Johnson, Boswell, and Blake, with some attention to several of the following: Goldsmith, Sterne, Gray, Cowper, Fanny Burney, Burke, William Godwin, and Mary Wollstonecraft.

406 English Poetry of the Romantic Period (3:3:0). Works of the major poets of the Romantic period: Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. This course may not be taken in conjunction with ENGL 381. Prerequisite: ENGL 361.

407 Prose and Poetry of the Victorian Period (3:3:0). Poetry and nonfiction prose by such authors as Carlyle, Arnold, Tennyson, Browning, Ruskin, and Mill.

408 Special Topics: British Literary Periods (3:3:0). An in-depth study of a selected period of British literature. In addition to literary examples, materials may be chosen from the art, philosophy, or popular culture of the time. May be repeated for credit when subtitle is different, with permission of department.

410 Technical and Report Writing (3:3:0). Prerequisite: 6 credits of composition, including ENGL 302, and 6 credits in literature; or permission of the Division of Continuing Education. Intensive study and practice in various forms of technical writing, including formal and informal reports, proposals, and technical correspondence. Emphasis on writing for a variety of audiences, both lay and informed, and on writing within various professional and organizational contexts.

421 Film History and Theory (3:3:0). Prerequisite: ENGL 300 or 301. Advanced survey of the history of film art and major theories concerning the nature of film.

423 Colonial and Federalist American Literature (3:3:0). The works of the first 200 years of American literature, including Edwards, Franklin, Irving, Cooper, and Bryant. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 381.

425 Literature of the American Renaissance (3:3:0). Major writers of the American Renaissance (1830-1865), with emphasis on the works of Emerson, Thoreau, Hawthorne, Melville, Whitman, and Poe. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 382.

429 Special Topics: American Literary Periods (3:3:0). In-depth study of a selected period of American literature. In addition to literary examples, materials may be chosen from the art, philosophy, or popular culture of the time. May be repeated once for credit when subtitle is different, with permission of department.

431 HIST 431/FRLN 431 Medieval Intellectual Topics (3:3:0). May be taken for credit by English or history or area studies majors. Examination of selected topics in the intellectual history of the Middle Ages. Specific topic may vary. The primary emphasis is literary or historical, depending on the discipline of the instructor. Relevant material drawn from philosophy, theology, and art may be considered.

432 Selections from the Literature of the Indian Subcontinent (3:3:0). Selected literary masterpieces in translation from the ancient and modern literature of the Indian continent, including romances, plays, and poetry from Sanskrit, Hindi, Tamil, Urdu, and other literatures. (Course credit is accepted for the B.A. non-Western requirement but may not be counted toward the requirement for the English major.) This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 393.

433 Japanese Literature in Translation (3:3:0). Selected literary masterpieces in translation from ancient and modern Japan, including a court romance (The Tale of Genji), essays (The Pillow Book), classical poetry, noh and Bunraku plays, haiku poetry and modern fiction. Review of the genres and traditions represented by those masterpieces. (Course credit is accepted for the B.A. non-Western requirement but may not be counted toward the requirement for the English major.) This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 394.

434 Chinese Literature in Translation (3:3:0). Selected masterpieces in translation, including the Confucian classics, ancient songs and poems, Tang and Sung poetry and prose, Yuan and Ming plays, novels and short stories.

435 Chinese Intellectual Topics (3:3:0). May be repeated once for credit when subtitle is different, with permission of department.

436 Selected Continental Novels in Translation (3:3:0). Selected European novels in translation. ENGL 436 concerns the continental novel from the eighteenth century to the end of the nineteenth century, and includes works of such writers as Balzac, Gogol, Stendhal, Turgeniev, Flaubert, Dostoevsky, Tolstoy, and Gaidos. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 377.

437 Selected Continental Novels in Translation (3:3:0). ENGL 437 deals with the continental novel from the beginning of the twentieth century to the present and includes such writers as Proust, Mann, Gide, Silone, Kafka, Sarthe, Cela, Moravia, and Grass. Attention to the influence of this literature on the novel in English. (Offered in cooperation with the Department of Foreign Languages and Literatures.) This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 378.

439 Special Topics: Non-British or American Literature (3:3:0). Study of selected topics, periods, genres, or authors in commonwealth or in Oriental literatures. May be repeated once for credit when subtitle is different, with permission of department.

440 English Renaissance Drama (3:3:0). Major dramatists and dramatists of the English Renaissance, exclusive of Shakespeare. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 353.

443 Restoration and Eighteenth-Century Drama (3:3:0). Restoration comedy of manners, sentimental comedy, neoclassical and bourgeois tragedy. Theories of drama and staging and parallel developments in opera. Such writers as Wycherley, Farquhar, Etheredge, Congreve, and others. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 356.

445 English and Irish Drama of the Twentieth Century (3:3:0). English and Irish drama from Yeats to Pinter. Plays by such authors as O’Casey, Synge, Eliot, Frye, Osborne, Wesker, Behan, Delaney, and Pinter. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 374.

447 American Drama of the Twentieth Century (3:3:0). American drama of the twentieth century, with special attention to the plays of Eugene O’Neill, Thornton Wilder, Arthur Miller, Tennessee Williams, and Edward Albee. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 389.

448 Modern Drama (3:3:0). Representative plays of contemporary dramatists of Europe and America, with emphasis on dramatic styles such as realism, expressionism, and existentialism. In alternate semesters, authors such as Ibsen, Strindberg, Hauptmann, Shaw, O’Neill, O’Casey, and others will be studied. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 375.

449 Special Topics in Drama (3:3:0). Study in depth of selected topics, periods, or playwrights. May be repeated once for credit when subtitle is different, with permission of department.

450 English Novel of the Eighteenth Century (3:3:0). The English novel from its beginnings through the turn of the eighteenth century. Works by such authors as Defoe, Richardson, Fielding, Sterne, Smollett, Scott, and Austen. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 570.

452 Development of the American Novel to 1914 (3:3:0). Major American novels of the pre-World War I period with emphasis on the work of Brown, Cooper, Hawthorne, Melville, Twain, Howells, James, Crane, Dreiser, Norris, and others. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 387.

453 English Novel of the Nineteenth Century (3:3:0). The English novel of the nineteenth century. Works by such authors as Dickens, Thackeray, E. Bronte, Eliot, Trollope, Meredith, and Hardy. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 371.
454 Development of the American Novel Since 1914 (3:3:0). The American novel from the end of World War I to the present including works by such authors as Fitzgerald, Hemingway, Faulkner, Dos Passos, Wolfe, Bellow, and Nabokov. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 388.

456 English Novel of the Twentieth Century (3:3:0). The English novel from the beginning of the twentieth century to the present. Works by such authors as Conrad, Ford, Bennett, Forster, Lawrence, Joyce, Woolf, Huxley, Greene, and others. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 372.

458 Fiction Writing Workshop (3:3:0). Prerequisite ENGL 397 or 398 or equivalent and permission of instructor. Students must submit a typed manuscript 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. A workshop course: intensive practice in creative writing and study of the creative process. This course concentrates on a specialized literary type other than the short story or poetry (for example, playwriting, screenwriting, children's literature, travel literature, autobiography, the gothic novel, translation) and the concentration is announced in the department's Course Description Booklet before preregistration. Intended for students already writing original creative work. (By permission of instructor, may be taken a second time for credit; the additional 3 hours, however, may not be counted toward the requirement for the English major. No more than a combined total of 9 hours may be taken in ENGL 458, 456, 464, 497 up to a combined total of 9 hours in all 4 courses.)

459 Special Topics in Fiction (3:3:0). Study in depth of selected topics, periods, or authors. May be repeated once for credit when subtitle is different, with permission of department.

462 English Poetry of the Twentieth Century (3:3:0). English poetry from 1900 to present; emphasis on work of Hardy, Yeats, Lawrence, Graves, Auden, Thomas, and Hughes. A work of fiction which employs poetic techniques, such as Joyce's Ulysses, may also be studied. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 365.

463 American Poetry of the Twentieth Century (3:3:0). Emphasis on the work of Robinson, Frost, Stevens, Williams, Pound, Crane, Eliot, and Lowell. A work of fiction employing poetic techniques, such as Faulkner's The Sound and the Fury, may also be studied. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 365.

464 Poetry Workshop (3:3:0). Prerequisite ENGL 397 or equivalent and permission of instructor. Students must submit a typed manuscript 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 craft of poetry and study of the imagination in the creative process. Intended for students already writing original poetry. At the discretion of the instructor, technical exercises and assigned reading may be required. (By permission of instructor, may be taken a second time for credit; the additional 3 hours, however, may not be counted toward the requirement for the English major. No more than a combined total of 9 hours may be taken in ENGL 458, 464, 497 (496). Students who have taken ENGL 469 may take 458 (465), 464, or 497 (466) up to a combined total of 9 hours in all 4 courses.)

468 Special Topics in Poetry (3:3:0). Study in depth of selected topics, periods, or authors. May be repeated once for credit when subtitle is different with permission of department.

471 Chaucer (3:3:0). The major works of Chaucer, with emphasis on The Canterbury Tales. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 341.

472 Spenser (3:3:0). Poetry of Edmund Spenser, with central emphasis on The Faerie Queene. May not be taken by anyone who has previously taken and satisfactorily completed ENGL 346.

473 Special Studies in Shakespeare (3:3:0). Study in depth of one aspect of Shakespeare's art or critical issues surrounding his work. May be repeated once for credit when subtitle is different, with permission of department.

474 Milton (3:3:0). Milton's major poetic works, with emphasis on Paradise Lost. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 355.

477 Special Topics: British Authors (3:3:0). Study of one or two major figures in British literature. May be repeated once for credit when subtitle is different, with permission of department.

478 Special Topics: American Authors (3:3:0). Study of one or two major figures in American literature. May be repeated once for credit when subtitle is different, with permission of department.

481 General Linguistics (3:3:0). Introduction to general linguistics: phonics, phonemics, morphology, and syntax. May not be taken by anyone who has previously taken and satisfactorily completed ENGL 391.

485 Structure of Contemporary American English (3:3:0). Phonology, morphology and syntax of contemporary American English. Accepted norms are discussed in detail, but dialect variation due to region or social class is also covered.

489 Advanced Expository Writing (3:3:0). Theory and practice of advanced expository writing; practice in analyzing and writing essays, articles and other expository forms. May not be taken by anyone who has previously taken and satisfactorily completed ENGL 467.

490 Special Topics in Film (3:3:0). American and foreign films selected by type, period, or director with the emphasis varying from year to year. Required viewings, student discussion, and written critiques. May be repeated with permission of department.

491 Special Topics in Folklore (3:3:0). An exploration of various aspects of folklore and folklife such as folklore and literature, folk arts, folk song, material culture. May be repeated once for credit when subtitle is different, with permission of department.

492 Science Fiction (3:3:0). Major works of science fiction in terms of mode, themes, and narrative techniques, especially the role of hypothesis in science fiction. Focus on novels and short stories from the early nineteenth century to the present. This course may not be taken by anyone who has previously taken and satisfactorily completed ENGL 306.

493 Special Topics in Popular Literature (3:3:0). Study of a specific topic or theme in popular literature. May be repeated once for credit when subtitle is different, with permission of department.

494 Special Topics in Criticism (3:3:0). Study in depth of a selected approach to literary criticism, as announced, with exercises in critical analysis. Examples: new criticism, structuralism, psychoanalysis, Marxism. May be repeated with permission of department.

495 Literary Modes (3:3:0). Theory and practice of such modes as tragedy, comedy, tragicomedy, romance and satire, considered in separate semesters and drawn from a variety of periods ranging from biblical times to the present, with examples from drama, poetry, and fiction. May be repeated with permission of department.

496 Special Topics: British or American Literature (3:3:0). Study in depth of a selected literary topic, period or genre, as announced. May be repeated with permission of department.

497 Special Topics in Creative Writing (3:3:0). Prerequisite ENGL 397 or 398 or equivalent and permission of instructor. Students must submit a typed manuscript 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. A workshop course: intensive practice in creative writing and study of the creative process. The course concentrates on a specialized literary type other than the short story or poetry (for example, playwriting, screenwriting, children's literature, travel literature, autobiography, the gothic novel, translation) and the concentration is announced in the department's Course Description Booklet before preregistration. Intended for students already writing original creative work. (By permission of instructor, may be taken a second time for credit; the additional 3 hours, however, may not be counted toward the requirement for the English major. No more than a combined total of 9 hours may be taken in ENGL 458, 464, 465, 497. Students who have taken ENGL 469 may take 458, 464, or 497 up to a combined total of 9 hours in all 4 courses.)
Course Descriptions

499 Independent Study (1-3:0:0). Prerequisite Permission of department and permission of instructor. Open only to English majors with 64 hours and 15 hours in 300- and 400-level courses. Intensive study of a particular author, genre, period, or critical or theoretical problem in literature or linguistics, to be conducted by an individual student in close consultation with an instructor. The student produces at least one substantial piece of written work during the semester on the findings of his or her research. (By permission of department, the course may be taken twice for a maximum of 6 hours of credit.)

503 Theory and Practice of Editing (3:3:0). Prerequisite 6 hours of English courses numbered above 300, including one advanced writing course — 309, 310, 397, 398, 458, 464, 489, 497 — or permission of department. 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 (3:0:0). Prerequisite Open to senior English majors and graduate students pursuing the M.A. in English or the M.F.A. Contact the English Department one semester prior to enrollment. Internships are approved work-study positions in writing or editing established by the English Department and one or more employer. Variable credit. Variable prerequisites.

507 Internship in Applied Linguistics (3:0:0). Prerequisite ENGL 582 and either ENGL 521 or EDCI 519. Contact the English Department one semester 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). Historical \( \ldots \) the development of some of the principal styles, in prose and poetry, of English and American Literature.

513 Advanced Special Topics in English (3:3:0). Prerequisite 15 hours of advanced undergraduate English courses and permission of department or possession of the baccalaureate degree. Intensive study of selected topics in English and American literature.

514 Theories of Comparative Literature (3:3:0). Prerequisite CL 300 and senior standing, or baccalaureate degree or permission of instructor. Intensive study of the major theories of comparative literature with special emphasis on international movements and their characteristic themes. Students will work with texts in the foreign language of their competence; other texts will be studied in translation.

520 Descriptive Linguistics (3:3:0). Introduction to the terminology and methodology of modern linguistic science, and a detailed 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 Applied Linguistics: Teaching English as a Foreign Language (3:3:0). Prerequisite Linguistics (descriptive or historical, graduate or undergraduate). 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. May not be taken by anyone who has previously taken and satisfactorily completed ENGL 621.

522 Modern English Grammar (3:3:0). Prerequisite A or B in ENGL 391, 485 or 520 or equivalent. 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 to analyze grammatical structure.

551 Literary Criticism (3:3:0). Studies of major critical theories and techniques with emphasis on the twentieth century.

556 Literary Style (3:3:0). Theory and practical analysis of English literary style. Several methodologies, including impressionistic, rhetorical, and linguistic, are examined and applied to the language of various literary texts, including essays, poems, and novels.

557 Old English (3:3:0). Study of Old English language, including 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). Prerequisite ENGL 464 or equivalent and permission of instructor. 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 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 poetry. 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). Prerequisite ENGL 485 or equivalent and permission of instructor. 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 antifiction techniques.

581/PSYC 581 Psycholinguistics (3:3:0). Prerequisite Introductory linguistics or psychology course or permission of instructor. Study of mental and psychological aspects of human language, including aphasia, association, autism, language acquisition, verbal concept formation, and perception.

582 Applied Linguistics (3:3:0). Prerequisite A or B in ENGL 391, 465, 520, or permission of instructor. Study of the applications of linguistic science to the teaching of English language and literature. 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 History of the English Language (3:3:0). Introduction to the history and development of the English language, including study of the 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.

European Studies Courses (EUST)

Area Studies

300 Foundations of European Civilization (3:3:0). Prerequisite 24 hours or permission of instructor. Examination of Greek, Roman, and Judeo-Christian origins of Europe's intellectual and cultural traditions, concentrating upon the political ideas, philosophical precepts, and cultural values basic to European thought.

350 Classicism and Romanticism (3:3:0). Prerequisite EUST 300 or permission of instructor. Examination of Classicism and Romanticism through literary and other cultural forms of expression in seventeenth-, eighteenth-, and nineteenth-century Europe.

400 The Arts in Modern European Culture (3:3:0). Prerequisite EUST 300 or permission of instructor. Examination of how the arts interact in reflecting historical, intellectual, and aesthetic aspects of nineteenth- and early twentieth-century European culture. Representative examples from music, theater, dance, architecture, and the visual arts.

450 The Twentieth Century in Europe (3:3:0). Prerequisite EUST 300 or permission of instructor. Examination of the main
currents of European life and thought in the twentieth century. Study of the principal influences and events of the period, culminating in an assessment of contemporary European problems and values.

Finance Courses (FNAN)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the School of Business Administration (except as general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

301 Financial Management (3:3:0). Prerequisite ECON 103, 104, ACCT 201, 202. DESC 202. Introduction to the management of a firm's financial resources given a wealth maximization decision criteria. Includes working capital management, fixed-asset investment, cost of capital, capital structure, and dividend decision analysis. Lecture, problems, and discussion.

311 Principles of Investment (3:3:0). Prerequisite FNAN 301 and ECON 310. Introduction to the valuation of equity and debt securities given modern capital market theory. Also includes a discussion of portfolio analysis as related to the valuation of securities. Lecture, discussion, and computer-assisted research.

321 Financial Institutions (3:3:0). Prerequisite FNAN 301 and ECON 310. Discussion of the basic objectives of financial institutions in light of industry structure and regulatory environment, and the decisions variables which management should concentrate upon in achieving its objectives. Includes the role that financial institutions play in the allocation of funds within the financial markets. Lecture, discussion, and computer-assisted research.

351 Principles of Real Estate (3:3:0). Dimensions and specialties involved in the public control and private development, sale, finance, and management of real estate. Subject areas include land planning, land use control, appraisal, finance, brokerage, property management, and investment. Lecture, discussion, and computer-assisted research.

401 Advanced Financial Management (3:3:0). Prerequisite FNAN 301. Analysis of decision making within the firm emphasizing the conceptual structure of problems and the use of advanced analytic techniques. Specific topics covered include current asset management, capital budgeting, capital structure, dividend policy, long-term financing, mergers, and corporate planning models. Lecture, discussion, case analysis.

411 Investment Analysis and Portfolio Management (3:3:0). Prerequisite FNAN 311. Analysis of the modern techniques of portfolio management including the evaluation of standards for the selection of individual securities for inclusion or deletion from portfolios. Risk-return analysis for portfolios and portfolio performance measures are presented. Lecture, discussion, computer-assisted research.

412 Futures Markets (3:3:0). Prerequisite FNAN 311 and permission of instructor. Introduction to options markets, commodity markets, and financial futures markets as they function to provide pricing mechanisms and alternative investment vehicles. Lecture, discussion, computer-based research.

421 Money and Capital Markets (3:3:0). Prerequisite FNAN 321. Discussion of how financial markets are organized, their role in the allocation of funds to various market segments, and the interaction between markets. Topics covered include aggregate flow of funds analysis as well as money markets, government markets, corporate markets, and mortgage markets. Lecture, discussion, computer-assisted research.

423 Commercial Bank Management (3:3:0). Prerequisite FNAN 321. Introduction to the management of commercial banks. Emphasis is placed on the management of deposits, cash and liquidity, lending, investing, trust services, capital structure in adequacy, international operations, current banking laws and regulations. Includes a discussion of bank holding companies, interstate banking proposals, and regulatory agency proposals for expanding banking powers.

440 International Financial Management (3:3:0). Prerequisite FNAN 301. Introduction to the management of the contemporary firm's international financial operations. Topics include foreign exchange risk, political risk, returns and risks of international projects, international money and capital markets, financial accounting, capital structure, and the cost of capital. Lecture, discussion, readings, and problems.

451 Real Estate Finance (3:3:0). Prerequisites FNAN 301 and 351. Mechanisms of estate finance, sources of funds, loan contracts, principles of mortgage risk analysis, and secondary mortgage markets. Students will develop analytical skills including use of the microcomputer and appropriate software.

452 (413) Real Estate Appraisal (3:3:0). Prerequisites FNAN 301 and 351. Economic theories of value applied to real estate; estimation of value through the cost, income, and market data approaches; valuation of a guide to business decisions; market analysis techniques for the major types of real estate; development of analytical skills including use of the microcomputer and appropriate software.

453 Real Estate Investment (3:3:0). Prerequisites FNAN 301 and 351. Introduction to the fundamentals of real estate investment, including an overall investment strategy, analytical skills, feasibility studies, and characteristics of various types of properties. Students will develop skills in using the microcomputer and appropriate software.

491 Seminar in Finance (3:3:0). Prerequisite FNAN 317, 321 and 401. Seminar in contemporary developments in finance, including financial management, financial institutions, financial markets, and investment management. Lecture, discussion, simulation, computer-assisted research.

492 Field Experience in Finance (3:3:0). Prerequisite Senior standing and permission of instructor. This educationally relevant, faculty-governed field experience gives students an opportunity to become involved in addressing actual challenges encountered by Northern Virginia businesses. Working through the Entrepreneurship Center, each client firm will be matched with a team of students assigned to propose action plans relating to a major problem or opportunity faced by the company.

499 (formerly BUAD 499) Independent Study (1-3:3:0). Prerequisite Finance majors with at least 9 upper-level finance credit hours. Research and analysis of selected problems or topics in finance. Must be arranged with an instructor and receive written approval of chair before registration. Written report required. May be repeated to a maximum of six hours if topics vary.

Foreign Language Courses (FRLN)

Foreign Languages and Literatures

431 ENGL 431 and HIST 431 Medieval Intellectual Topics (3-3:0). May be taken for credit by English, history, or area studies majors. A topic in the intellectual history of the Middle Ages. Specific topics vary. Emphasis is literary or historical, depending on the discipline of the instructor. Relevant material drawn from philosophy, theology, and art may be considered.

510 Bibliography and Research Problems in Foreign Languages and Literature (3-3:0). Prerequisite Graduate standing or permission of department. 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.

525 Literary Translation (3-3:0). Prerequisite Graduate standing or permission of instructor. Advanced work in literary translation. The critical approach to and analysis of diverse literary texts ranging from poetry, drama, and essay to excerpts from novels.

565 Theory of Translation (3-3:0). Lectures on the nature and function of the translating process. Evaluation of theories of translation with respect to text-typology. Critiques of selected translations from the target languages to English and vice versa.
French Courses (FREN)

Foreign Languages and Literatures

Placement: See Admission Procedures.

101 Elementary French I (3:3:1). Designed for students with no knowledge of French. Introduction to French, including elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required.

102 Elementary French II (3:3:2). Prerequisite FREN 101 or permission of instructor. Continuation of FREN 101. Lab work required.

105 Review of Elementary French (3:3:1). Prerequisite Appropriate placement score or permission of department. Review for students who have studied French previously. May not be taken for credit in combination with 101, 102, or 109. Lab work required.

109 Intensive Elementary French (6:6:2). Equivalent to FREN 101, 102 taught in a single semester. Recommended for students who desire an intensive introduction to French. May not be taken for credit in combination with 101, 102, or 105. Lab work required.

201 Intermediate French I (3:3:1). Prerequisite FREN 102, 105 or 109, or appropriate placement score, or permission of department. Further development of skills in listening, speaking, reading, and writing. FREN 201 and 202 must be taken must be taken in sequence. Lab work required.

202 Intermediate French II (3:3:1). Prerequisite FREN 201, or appropriate placement score, or permission of department. Application of language skills to reading, composition, and class discussion. Lab work required.

209 Intensive Intermediate French (6:6:2). Prerequisite FREN 102 or 105 or 109, or appropriate placement score, or permission of department. Equivalent to FREN 201 and 202 taught in a single semester. May not be taken for credit in combination with FREN 201 or 202. Lab work required.

252 Intermediate French Conversation (1:1:0). Prerequisite or corequisite FREN 202 or equivalent. Development of oral proficiency in French. Discussion of selected topics touching on practical aspects of everyday life. Enrollment limited to 10.

300 Study Tour in France (1-6:0:0). Prerequisite FREN 202 or permission of instructor. Directed study tour of cultural and literary points of interest in France. Briefing sessions and a reading selection are given before the trip. All papers and examinations required for credit are due at the end of the summer session.

325 Major French Writers (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Study of the works of major French writers. Writers to be studied vary. Course work in English. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May be repeated for credit with permission of department.

329 Problems of Western Civilization in French Literature (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Basic philosophical, moral, social, and political dilemmas reflected in the literature of major French writers. Course work in English. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May be repeated for credit with permission of department.

350 French Conversation (3:3:0). Prerequisite FREN 202 or equivalent. Development of conversational proficiency in French. Specifically designed for French majors who need practice in the spoken language beyond the intermediate level.


352 French Composition (3:3:0). Prerequisite FREN 202 or equivalent. Development of writing skills through written reports on current events and on literary topics. Specifically designed for French majors who need practice in the written language beyond the intermediate level.


357 Translation of Texts in Specialized Fields (3:3:0). Prerequisite FREN 202 or permission of instructor. Translations from French to English, English to French, of texts selected from current periodicals and newspapers in various fields. Recommended for students who wish to improve language skills or intend to use them professionally.

375 French Civilization: From Ancient Gaul to the French Revolution (3:3:0). Prerequisite FREN 202 or permission of instructor. Study of contributions of France to world civilization; emphasis on development of ideas, arts, sciences, and institutions. Offered in alternate years.

376 French Civilization: From the Revolution to Contemporary France (3:3:0). Prerequisite FREN 202 or permission of instructor. See FREN 375.

377 Survey of French Literature: Middle Ages to 1800 (3:3:0). Prerequisite FREN 202 or permission of instructor. French literature through the centuries, with reading and analysis of representative texts of the major authors. Offered in alternate years. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

378 Survey of French Literature: 1800 to Present (3:3:0). Prerequisite FREN 202 or permission of instructor. See FREN 377.

381 Introduction to Literary Analysis (3:3:0). Prerequisite 75 semester hours of French. A structured approach to the reading and analysis of French literary texts.

391 French for the Business World I (3:3:0). Prerequisite FREN 202 or permission of instructor. Introduction to study of styles used in commercial, private, and official formats for correspondence and various common business documents. Emphasis on written exercises. Designed to satisfy the needs of students equipping themselves for multinational business and foreign service.

392 French for the Business World II (3:3:0). Prerequisite FREN 391 or permission of instructor. Continuing study of terminology used in business affairs, with attention to form and style of business documents. Oral and written practice of French used in everyday work situations. Students may use this course in preparation for the Paris Chamber of Commerce certificate in Business French.

405 French Literature of the Renaissance (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Development of the humanistic tradition in France during the sixteenth century, especially as reflected in the works of Rabelais and Montaigne. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

413 French Literature of the Seventeenth Century: Classical Drama (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study of the dramatic literature of the seventeenth century. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.
414 French Literature of the Seventeenth Century: Prose and Poetry (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Reading and analysis of representative texts of the major authors. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

421 French Literature of the Eighteenth Century: Montesquieu and Voltaire (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study of Montesquieu, Voltaire, and other writers of the first half of the century. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

422 French Literature of the Eighteenth Century: Diderot and Rousseau (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study of Diderot, Rousseau, and other writers of the second half of the century. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

431 French Literature: 1800-1850 (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Poetry, theater, and novel of the Realist, Naturalist, and Symbolist movements. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

432 French Literature: 1850-1900 (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Poetry, theater, and novel of the Romantic and Parnassian movements. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

441 Twentieth-Century Prose and Fiction (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Principal literary trends in contemporary French literature; emphasis on evolution of the novel from Proust and Gide to Beckett and the "New Wave." May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

442 Twentieth-Century Drama and Poetry (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. French drama from Sartre to the "New Wave." French poetry from Symbolism to contemporary poets. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

451 Writers of French-Speaking Africa and the Caribbean (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study of selected plays, tales, and novels expressing the culture and aspirations of the peoples of Africa and the Caribbean. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May also be taken to meet the non-Western requirement.

452 French-Canadian Literature (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study of the Francophone literature of Canada with emphasis on contemporary works. May be taken toward fulfillment of the general requirement in literature for baccalaureate degree.

460 Advanced Oral and Written Expression (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Intensive course designed to help students obtain facility in oral and written French. Development of conversational skills and mastery of vocabulary. Class discussions, oral and written reports on current topics.

461 Linguistic Structure of Modern French (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Descriptive analysis of the phonology, morphology, and syntax of modern standard French. Optional lab work.

462 Stylistics (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Analysis of the more complex aspects of the French language and of various stylistic processes. Development of writing skills through readings, discussion, and composition.

480, 481 Special Topics (3:3:0), (3:3:0). Prerequisite 18 semester hours of French or permission of instructor. Study in depth of a selected literary theme, topic, period, or genre. May be repeated for credit with permission of instructor.

490, 491 Independent Study (1-3:0:0), (1-3:0:0). Prerequisite 84 hours as a major in French and permission of chair. Research and analysis of a selected problem in literature or linguistics in consultation with a member of the department. Only 6 hours of independent study may be applied to fulfillment of requirement in the major.

497, 498 Senior Honors Tutorial (3:0:0), (3:0:0). Prerequisite 84 hours as a major in French, with GPA of 3.00 and 3.00 in the major field. Students who meet these requirements may be admitted to candidacy upon submission of a letter of application to the departmental Honors Committee in the second half of the junior year, supported by a faculty recommendation and an interview by and with approval of the Honors Committee. In the first semester, weekly meetings with a faculty member to discuss readings from a comprehensive list prepared by the French faculty. In the second semester, independent research and completion of an honors essay under the supervision of a member of the French faculty.

515 Medieval French Literature (3:3:0). Intensive study of the outstanding literary works of the Middle Ages. Course work in French.


518 Studies in Eighteenth-Century Literature (3:3:0). Selected writers, works, themes, or trends of French literature in the eighteenth century. Content varies. Course work in French. May be repeated for credit with permission of department.

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 credit with permission of department.

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 credit with permission of department. A maximum of 6 hours of credit may be earned. Course work in French.

550, 551 Special Topics (3:3:0), (3:3:0). Specialized topics 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 lexicum, 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, including 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.

580 Contemporary French Society and Culture (3:3:0). Study of structure and evolution of the society and culture of contemporary France. Also see FRLN listing.
505 Transportation Geography (3:3:0). Prerequisite 6 hours 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). Prerequisite Graduate standing or permission of instructor. 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). Prerequisite Graduate standing or permission of department. A course in statistics. Spatial approaches to the study of health and disease. Topics include disease ecology, disease diffusion, and geographic perspectives on improving health care delivery.

551 Thematic Cartography (3:3:0). Prerequisite Graduate standing or permission of instructor. Analysis of the nature of perceptual organization and visual systems in thematic map communication portrayal, graphic handling, and analysis of data.

553 Geographic Information Systems (3:3:0). Prerequisite Course in computer science and graduate standing or permission of department. Sources of digital geographic information, methods of storage and processing for cartographic display, and geographical analysis.

554 History of Cartography (3:3:0). Prerequisite Graduate standing or permission of department. History of cartographic portrayal of the earth from ancient times through the nineteenth century, with emphasis on the interrelation of human culture, technological development, and geographical knowledge as reflected in maps.

562 Analytic Photogrammetry (3:3:0). Prerequisite GEOG 414, a course in matrix algebra and graduate standing, or permission of department. Analysis of the spatial aspects of maps. Survey of the methods of using remotely sensed data for obtaining geographic information of the earth's surface, including both image enhancement methods and classification strategies for a variety of physical and cultural features.

579 Remote Sensing (3:3:0). Prerequisite Course in physical geography or geology and course in aerial photo interpretation or permission of instructor. 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.

580 Digital Remote Sensing (3:3:0). Prerequisite GEOG 416 or 579 or permission of instructor. Examination of the theory and techniques of using digital remotely sensed data for obtaining geographic information of the earth's surface, including both image enhancement methods and classification strategies for a variety of physical and cultural features.

581 World Food Population (3:3:0). Prerequisite Graduate standing or permission of instructor. Topics include maldistribution of population, regional disparities in growth rates and income distribution, food production and world hunger. Discussion of population policies, with emphasis on Third World countries.

583 Spatial Dynamics of Political Systems (3:3:0). Prerequisite Graduate standing or permission of instructor. Topics include territoriality, reapportionment, spatial allocation of public facilities, perception of boundaries. Emphasis on the spatial impact of political process upon land use.

585 Quantitative Methods (3:3:0). Prerequisite Course in statistics or permission of department. Survey of quantitative methods commonly used in geographic research. Emphasis on spatial analysis techniques.

590 Selected Topics in Geography and Cartography (3:3:0). Prerequisite Graduate standing or permission of department. Designed to analyze topics of immediate interest. Content varies.

Geography Courses (GEOG)

Public Affairs


102 Physical Geography (3:3:0). Interrelated process affecting the global distribution and character of climate, soils, vegetation, hydrology, and landforms; elements of mapping.

103 Cultural Geography (3:3:0). Study of relationships between geography and human population distribution, cultural patterns, and economic development.

110 Maps and Map Reading (3:3:0). Reading, interpretation, and analysis of a broad variety of maps.

280 Geography of Virginia (3:3:0). Natural and cultural forces of Virginia. Study of regional makeup and analysis of human and environmental interactions.

301 Political Geography (3:3:0). Prerequisite 24 hours. Structures and processes involved in the creation of political space at all levels — city, county, state, national, and international. Emphasizes interrelations between geographical-political units and problems created by overlapping units.

303 Conservation of Resources and Environment (3:3:0). Prerequisite 24 hours. Analysis of spatial aspects of world resources and problems resulting from their unequal distribution or use. Population growth, its implications for resource use, and pollution problems are stressed.

304 Geography of Population: Patterns and Problems (3:3:0). Prerequisite 24 hours. Spatial distribution of population, its causes and effects, and the changing patterns resulting from population mobility. Emphasis on spatial characteristics of variables such as age, sex, race, education, and income. Population problems such as crowding and poverty are viewed in the spatial context.

305 Economic Geography (3:3:0). Prerequisite 24 hours. Analysis of the pattern of distribution of world economic activity, the spatial economics behind this pattern, and the influence of this distribution upon other spatial systems.


307 Agricultural Geography (3:3:0). Prerequisite Combination of 6 hours of geography and economics or permission of instructor. Survey of major agricultural systems, including production, planning, and distribution.

309 (206) Introduction to Meteorology and Climate (3:3:0). Prerequisite GEOG 102 or equivalent or permission of instructor. Elements of meteorology, analysis of world distribution of meteorological controls as the bases of regional climatic variations.

310 Cartography I (4:3:2). Prerequisite STAT 250 or equivalent in statistics or permission of instructor. Principles and methods of map making. Collection, analysis, and cartographic portrayal of geographic data.

311 Cartography II (4:3:2). Prerequisite C or better in GEOG 310 or permission of instructor. Cartographic methods of compilation, construction, and reproduction with emphasis on planning and execution of complex maps.

315 (215) Geography of the United States (3:3:0). Prerequisite 6 hours of geography and/or American studies or permission of instructor. Diversity of physical and cultural landscapes in the U.S., emphasizing role of environment in shaping patterns of demographic distribution and economic activity.

316 (201) Geography of Latin America (3:3:0). Prerequisite 6 hours of geography and/or Latin American studies or permission of instructor. Regional survey of physical resources, populations, cultural characteristics, and economic activities in Latin America.

320 (220) Geography of Europe (3:3:0). Prerequisite 6 hours of geography and/or European studies or permission of instructor.
Environmental, economic, social, and political factors influencing the regional structure of Europe. The effect of the new European economic and social communities upon the urban network, the regions, and their relationships.

325 (225) Geography of North Africa and the Middle East (3:3:5). Prerequisite 6 hours of geography and/or courses related to Middle East, or permission of instructor. Environmental, economic, social, and political factors of differentiation of the regional structure and distribution of resources in the North African and Middle Eastern countries.

330 (230) Geography of the Soviet Union (3:3:0). Prerequisite 6 hours of geography and/or Russian studies or permission of instructor. Analysis of the geographic factors involved in the history, economic development, and geopolitical situation of the Soviet Union. Ethnic diversity and population problems in a multinational state.

335 Geography of Canada (3:3:0). Prerequisite 6 hours of geography and/or Canadian studies, or permission of instructor. Analysis of physical and human geographic factors affecting Canadian history, urban/rural settlement, economics, politics, and culture. Emphasis is on the uniqueness of Canadian issues and problems as understood through a study of Canada's regions, resources, and urban system.

399 Selected Topics in Geography (3:0:0). Prerequisite 24 hours. Content varies; determined by instructor.

406 Suburban Geography (3:3:0). Prerequisite 24 hours. Analysis of the spatial aspect of man's social, economic, and political activities within suburban areas. Suburbanization viewed both as an independent force and as a component of the larger urbanization process. Northern Virginia is utilized as a lab for suburban geographical study and student-initiated fieldwork projects.

411 Introduction to Computer Cartography (3:3:0). Prerequisite 6 hours of geography and a course in computer programming. Concepts and techniques involved with production and utilization of computer-generated imagery.

412 Aerial Photography Interpretation (3:3:0). Prerequisite 54 hours and GEOG 102 or 103, or permission of instructor. Introduction to technology of gathering and managing information. Methods and techniques of interpreting and using information contained in aerial photography including applications to various aspects of the physical and cultural landscape.

413 Photogrammetry (3:3:0). Prerequisite 54 hours, course in mathematics or physics, or permission of instructor. Theories and processes involved in terrestrial measurement and mapping with remotely sensed imagery. Particular emphasis on current technology and applications of topographic and thematic mapping from photographic images.

414 Photogrammetry II (3:3:0). Prerequisite GEOG 413, course in statistics, or permission of instructor. Theory and methods of stereoscopic plotting, error adjustments, and aerotriangulation.

415 Seminar in Geography (3:3:0). Prerequisite Open to geography majors with 54 hours. Opportunity to integrate previous course work into a comprehensive disciplinary framework and to study in depth some particular aspect of geography. The format varies but stresses fieldwork and readings in the current literature, history, and research techniques of the discipline.

416 Satellite Image Analysis (3:3:0). Prerequisite GEOG 412 or permission of instructor. Examination of the methods and techniques of interpreting and using information obtained by non-photographic remote sensing systems, with particular emphasis on spaceborne platforms. Includes analysis of imagery for both physical and cultural environments.

420 Physiography of North America (3:3:0). Prerequisite GEOG 102, 3 additional hours of geography or geology, or permission of instructor. Physiographic features of the North American continent, their spatial distribution and their influence on cultural, demographic, and economic development of the U.S. and Canada.

430 Land Use Geography (3:3:0). Prerequisite 6 hours of geography to include one physical geography course, or permission of instructor. Analysis of the different categories of land use, the associations and regional distribution of agricultural land uses, the spatial distribution and competition of urban-suburban land uses, and the need for an evaluation of land capabilities.

480 Internship (3:6:0:0). Prerequisite Open only to authorized majors with 84 hours. Internships are approved work-study programs with specific employers. Credit is determined by department. Contact department one semester prior to enrollment.

499 Independent Study in Geography (1:3:0:0). Prerequisite Open only to geography majors with 54 hours and permission of department and instructor. Individual study of a selected area of geography. Directed research paper is required.

Geology Courses (GEOL)

Geology

101 Physical Geology (4:3:2). Study of the earth and the processes which act on and within the earth. Specific topics include minerals, rocks, earthquakes, earth structure, plate tectonics, rivers, glaciers, deserts, mountain building, and ocean formation. Course may include field trips. (This course is recommended as partial fulfillment of the general studies required in lab science for all students.)

102 Historical Geology (4:3:2). History and development of the earth as revealed through a succession of geological events and processes. Subjects include the origin of the solar system and the earth, the changes in the distribution of continents and mountain systems through time due to continental drift, and the succession of life forms through the geological ages. Course may include field trips. (This course is recommended as partial fulfillment of the general studies requirement in lab science for all students.)

103 Geology of Virginia Parks (2:2:0). Geological evolution and features of state parks.

104 Introduction to Field Geology (2:0:2). Four weekend trips to selected locations in Virginia and adjacent states. Geological trips are preceded by an evening lecture. Students must pay costs (including transportation fee).

105 Geology of Virginia (2:2:0). Geology, geomorphology, physiography, geological history, and natural resources of Virginia. May include field trips.

106 Environmental Geology (3:3:0). Investigation of geological principles directly related to environmental problems and geological causes and effects of natural disasters, geology of natural resources, geology of land use planning, and geology as related to health problems.

107 Gemstones I. Colored Gemstones (2:1:2). Techniques used in the identification and preparation of colored gemstones, the economic factors which control their production, and the geological processes by which colored gemstones are formed.

108 Field Techniques I (1:0:2). Basic use of Brunton Compass and topographic maps for the purpose of location and making geologic measurements.

111 Physical Geology for Science Majors (4:3:3). Survey of the nature of the earth, and the means by which this information is determined. GEOL 102 and 111 may be used to satisfy the lab science requirement for the B.A. degree. Lab may include field trips.

201 Mineralogy (4:3:3). Crystallographic, optical, chemical, and physical properties of minerals. Lab may include field trips. For geology and chemistry majors.

202 Invertebrate Paleontology (3:2:3). Classification, evolutionary trends, and distribution of the common invertebrate fossils. Lab includes field collection of fossils, their preparation and identification. For geology and biology majors.

204 Geomorphology (3:2:3). Prerequisite GEOL 101 or GEOG 102. Study of processes that occur at the earth's surface and the landforms that result. Lab stresses the recognition, description, and analysis of landforms from pictures, maps, and aerial photos. Lab may include field trips.

206 Topics in Geology (1-3:1-3:0). Discussion of many research programs in geology, presented by staff and visiting geologists. Each student discusses an unsolved problem, methods now being
used to solve the problem, and possible solutions that are being evaluated.

206 Topics in Geology (1-3:1-3:0). Discussion of many research programs in geology, presented by staff and visiting geologists. Each scientist discusses an unsolved problem, methods now being used to solve the problem, and possible solutions that are being evaluated.

207 Petrology (4:3:3). Prerequisites GEOL 101, 102, 201. The genesis, classification, and recognition of igneous, sedimentary, and metamorphic rocks. Lab may include field trips.

208 Gemstones II, Diamonds (2:1:2). Techniques used in the identification and preparation of diamonds and diamond substrates, the economic factors which control their production, and the geological processes by which diamond deposits and their substitutes are formed.

301 Structural Geology (3:2:3). Prerequisites GEOL 101, 102, 201. Knowledge of high school algebra, plane geometry, and trigonometry, or equivalent competency exam required. Igneous and sedimentary rocks in folded, faulted, and metamorphosed terrains. Lab may include field trips to structurally deformed parts of the Appalachian Mountains.

303 Field Techniques II (2:0:4). Prerequisite GEOL 101, 102, 108, 201, corequisite 207. Surveying, geologic mapping techniques, and the collection of geologic field data.

304 Stratigraphy (3:2:3). Prerequisites GEOL 101, 102, 201, 207. Principles of stratigraphic analysis with reference to the geology of various areas. Lab includes analysis of surface and subsurface stratigraphic data and a field exercise. Lab may include field trips.

305 Optical Mineralogy (4:3:3). Prerequisites GEOL 101, 102, 201, 207. Optical properties of minerals as a means of identification. Minerals are studied as crushed fragments, oriented mineral sections, and rock thin sections with the polarizing microscope. Introduction to use of Universal Stage for three-dimensional rotations of mineral specimens under microscopic examination.

306 Soil Mechanics for Geologists (3:3:0). Prerequisites GEOL 101, 102, 201. Physical and engineering properties of soil, including its origin, structure, mineralogy, strength, compressibility, and permeability. Applications to construction problems.

307 Micropaleontology (3:2:3). Prerequisites GEOL 101, 102, 202. Classification, evolutionary trends, and stratigraphic uses of microfossils. Lab includes identification and interpretation of fossil assemblages, and may include field trips.


309 BIOL 309 Introduction to Oceanography (3:3:0). Prerequisites GEOL 101 or 111, BIOL 103 or 113, or permission of instructor. Introduction to the physical, chemical, biological, and geological aspects of the oceanic environment. May include field trip to the Atlantic Coast.

310, 311 Geological Field Studies (2:0:0), (2:0:0). Prerequisites GEOL 101, 102, 201. One or more field trips totaling 15 to 20 days in an area to be specified in the class schedule. Involves camping out (weather permitting). Students must pay costs (including transportation fees).

312 Geology of Terrestrial Planets (2:2:0). Prerequisite GEOL 101, 102. Physical and chemical nature of the earth, the other terrestrial planets, and their satellites. Includes discussions of the origin and evolution of the inner planets, with the earth as a frame of reference.

313 Hydrogeology (3:3:0). Prerequisite GEOL 101 or GEOG 102, MATH 113, CHEM 211. Geological and hydrologic factors controlling the occurrence, distribution, movement, quality, and development of groundwater. Environmental considerations.

314 Sedimentary Facies Analyses (3:3:0). Prerequisite GEOL 101, 102, 201, 202, 207. Analysis of modern depositional systems and environments with the purpose of developing analogs for the recognition of ancient sedimentary environments. May include field trips.

315 Topics in Geology II (1-3:1-3:0). Prerequisites GEOL 101, 102. Discussions of a particular research program in geology, presented mostly by the teacher. Topic is designated in the class schedule. May include field trips.

316 Computers in Geology (3:3:0). Prerequisites GEOL 101, 102, 201, one semester of mathematics, or permission of instructor. Uses of mainframe and microcomputers, with emphasis on geologic applications. No previous computer experience is assumed.

401 Igneous and Metamorphic Petrology (4:3:3). Prerequisites GEOL 101, 102, 201, 207, 305, CHEM 211-212, or permission of instructor. Origin and evolution of igneous and metamorphic rocks; emphasis on principles of inorganic chemistry applied to crystalline rocks. Lab emphasizes study of rock fabric and role of coexisting minerals in this section. Lab may include field trips.


403 Geochemistry (3:3:0). Prerequisites GEOL 101; CHEM 211-212. Stable isotope geochemistry, crystal geochemistry, geochronology, water geochemistry, organic geochemistry, and the geochemistry of rocks.


405 Geology of Mineral and Energy Resources (3:3:0). Prerequisites GEOL 101, 102, 201, 207, 301. Topics include metallic and nonmetallic ore deposits, fossil fuels, alternate energy resources, and methods by which each is used. May include field trips.

406 Topics in Geology III (1-3:1-3:0). Prerequisites Geology major with 80 credit hours and permission of chair. Discussions of a particular research program in geology, presented mostly by the students. Topic is designated in the class schedule. May include field trips.


408, 409 Practicum for Geology Laboratories (1:1:3), (1:1:3). Prerequisites Geology major with 80 credit hours and permission of chair. Study of the techniques used to make the geology lab an effective component in geological education. Discussions of the development of testing materials, supplemented by experience in the operation of a lab section of a geology course.

410, 411 Special Projects in Geology (2:0:5), (2:0:5). Prerequisites Geology major with 80 credit hours and permission of chair. Geological research conducted by the student. Includes a literature search, conferences, and field and/or lab work. Written and oral reports required.

417 Geophysics (3:3:0). Prerequisites GEOL 101, MATH 113, one year of physics, or permission of instructor. Geology and physics are combined to understand the dynamic systems of the earth.

500, 501 Selected Topics in Modern Geology (1-3:1-3:0) (1-3:1-3:0). Prerequisite Baccalaureate degree in geology or permission of instructor: Lecture/lab/field trip. Topic designated in the class schedule.

514 Biostratigraphy and Biofacies Analysis (4:3:3). Prerequisite Baccalaureate degree in geology or permission of instructor. Use of fossils in correlating and dating rock units in various fields of energy exploration. Relationships between fossils and paleoenvironments. May include field trips.

515 Advanced Structural Geology (4:3:3). Prerequisite Baccalaureate degree in geology or permission of instructor. 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 include field trips.

516 Appalachian Stratigraphy (3:3:0). Prerequisite Baccalaureate degree in geology or permission of instructor. Analysis of the stratigraphic and tectonic history of sedimentary rocks of the Appalachian Mountain system with emphasis on the stratigraphic provinces that contain energy resources.
German Courses (GERM)

Foreign Languages and Literatures

Placement: See Admission Procedures.

101 Elementary German I (3:3:1). Designed for students with no knowledge of German. Introduction to German, including elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required.

102 Elementary German II (3:3:1). Prerequisite GERM 101 or permission of department. Continuation of GERM 101. Lab work required.

105 Review of Elementary German (3:3:1). Prerequisite Appropriate placement score or permission of department. Review of elements of German for students who have studied German previously. May not be taken for credit in combination with GERM 101, 102, or 109. Lab work required.

109 Intensive Elementary German (8:6:2). Equivalent to GERM 101 and 102 taught in a single semester. Recommended for students who desire an intensive introduction to German. May not be taken for credit in combination with GERM 101, 102, or 105. Lab work required.

201 Intermediate German I (3:3:1). Prerequisite GERM 102, 105, or 109, appropriate placement score, or permission of department. Further development of skills in listening, speaking, reading and writing. GERM 201 and 202 must be taken in sequence. Lab work required.

202 Intermediate German II (3:3:1). Prerequisite GERM 201, appropriate placement score, or permission of department. Application of skills to reading, composition, and discussion. Lab work required.

209 Intensive Intermediate German (6:6:2). Prerequisite GERM 102, 105, 109, or appropriate placement score or permission of department. Equivalent to GERM 201 and 202, taught in a single semester. May not be taken for credit in combination with GERM 201 or 202. Lab work required.

301 German Culture and Civilization (3:3:0). Prerequisite 54 hours or permission of instructor. Development of German civilization from eighteenth century to the present. German cultural contributions to world civilization. Taught in English.

302 Germany Today (3:3:0). Prerequisite 54 hours or permission of instructor. Contemporary German life; its major aspects, problems, and goals, seen from the West German perspective. Taught in English.

305 Field Study in German Culture (1-1:0). Prerequisite or concurrent GERM 301 or 302, or permission of instructor. Study tour of cultural centers in the German-speaking areas of Europe. In consultation with a designated faculty member, students undertake a research project on a previously chosen topic in German culture and present their findings in a substantial paper.

310 German Conversation and Composition (3:3:0). Prerequisite GERM 202 or equivalent or permission of instructor. Development of fluency in speaking and proficiency in writing German through discussion, reports, and compositions based on texts dealing with contemporary events and issues. Not for native speakers.

312 Practical Stylistics (3:3:0). Prerequisite GERM 202 or equivalent or permission of instructor. Presentation of the main stylistic and idiomatic features of German. Practice of these features (syonyms, idiomatic expressions, different levels of style).

316 German for the Business World (3:3:0). Prerequisite GERM 202 or equivalent or permission of instructor. Introduction to the terminology and structural features of business German. Emphasis on acquiring vocabulary and on developing facility in reading German business articles and correspondence. Practice in preparing letters and forms used in routine business transactions.

325 Major German Writers (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Works of major German writers in translation. Writers to be studied vary. Course work in English. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May be repeated for credit with permission of department.

340 Survey of German Literature (3:3:0). Prerequisite GERM 202 or equivalent or permission of instructor. Required for German majors. Overview of the history of German literature from its beginnings to 1880. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

350 Early German Literature (3:3:0). Prerequisite 15 hours of German or permission of instructor. German literature from the heroic saga to the advent of the Enlightenment, with primary emphasis upon the medieval epic and Minnesang, and the drama and picassque novel of the Baroque age. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

356 The Literature of German Romanticism (3:3:0). Prerequisite 15 hours of German or permission of instructor. Background and some theory of German Romanticism, selected poetry and prose. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

370 German Literature; 1830-1880 (3:3:0). Prerequisite 15 hours of German or permission of instructor. Study of the literature of Young Germany, Biedermeier and Poetic Realism; prose, drama, and lyric poetry. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

375 Advanced German Grammar (3:3:0). Prerequisite 18 hours of German or permission of instructor. Systematic approach to the grammar of modern German. Application of theoretical knowledge in closely guided exercises.

418 Advanced Composition (3:3:0). Prerequisite 15 hours of German or permission of instructor. Development of proficiency in writing German through intensive practice in preparing guided and original compositions.

420 Linguistics of Modern German (3:3:0). Prerequisite 18 hours of German or permission of instructor. Study of the German language introducing the principles of modern linguistics. Analysis of German phonology, morphology, and syntax. Particularly valuable to the student who intends to teach or undertake graduate study in German.

442 The Age of Goethe (3:3:0). Prerequisite 15 hours of German or permission of instructor. Major works of Enlightenment, Sturm und Drang, Classicism, and early Romanticism. Emphasis on the relationship between German literature and poetry by Goethe and Schiller; some Lessing and Kleist. This course may not be taken by anyone who has previously taken and satisfactorily completed GERM 440 or 441.

450 Modern German Literature: 1880-1924 (3:3:0). Prerequisite 15 hours of German or permission of instructor. Naturalism, impressionism, the works of fin-de-siecle writers, and Expressionism. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

451 Modern German Literature: 1925 to the Present (3:3:0). Prerequisite 15 hours of German or permission of instructor. Literary trends since 1925. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

480 Special Topics in German Literature (3:3:0). Prerequisite 15 hours of German or permission of instructor. German literature by topics or genres, such as literature of revolt, literature in lieder and operas, major types of poetry, the novella. Topic varies. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May be repeated for credit with permission of department.

490, 491 Independent Study (1-3:0:0). (1-3:0:0). Prerequisite German majors with 84 hours and permission of chair. Research and analysis of a student problem in literature or linguistics in consultation with a department member. Maximum of six hours of independent study may be applied to fulfillment of requirements in the major.

497, 498 Senior Honors Tutorial (3:0:0). (3:0:0). Prerequisite German majors with 84 hours and a GPA of 3.00 and 3.00 in the major field. Students who meet these requirements are admitted to candidacy upon submission of a letter of application to the departmental Honors Committee in the second half of the junior
182  Course Descriptions

year, supported by a faculty recommendation and an interview by
and with the approval of the Honors Committee. In the first
semester, weekly meetings with a faculty member to discuss
readings from a comprehensive list prepared by the German
faculty. In the second semester, independent research and
completion of an honors essay under the supervision of a member
of the German faculty.

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 credit with permission
of department.

525 Studies in Modern German Literature (3:3:0). Writers,
themes, or genres of modern German literature. May be repeated
for credit with permission of department.

550 Special Topics (3:3:0). Study of a special topic in the area
of German language, literature, or culture. Specific topics are
announced in advance. May be repeated for credit with permission
department.

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 characteris-
tic of the various stages of development.

Government and Politics Courses (GOVT)

Public Affairs

103 Introduction to Democratic Government (3:3:0). Analysis
and comparison of American presidential and British parliamentary
forms of democratic government, examined in light of basic
concepts and institutions of democracy. Not open to students who
have completed a course in American national government.

132 Introduction to International Politics (3:3:0). Nature of
international politics; approaches to study of international politics;
states and nonstate actors in international system; patterns of
action and interaction among nation-states; international
institutions; major global issues.

133 Introduction to Comparative Politics (3:3:0). Introduction to
the methods and subject matter of comparative political analysis:
the major issues of political systems, the politics, participation in
government, structural, the policy making process, and the
evaluation of political performance.

204 American State and Local Government (3:3:0). Nature,
organization, functions, and problems of American state and local
governments.

241 Introduction to Public Administration (3:3:0). Prerequisite
GOVT 103 or permission of instructor. Administrative structure and
processes, organization theory, administrative behavior, personnel,
decision making, communications, leadership, management,
budgetary processes, and administrative responsibility.

243-244 America in the Global System (3:3:0). Prerequisite
GOVT 132. Courses must be taken in sequence. Policies and role
of the United States in the world community. Emphasis on analysis of
internal and external factors that shaped conduct of the United
States in the global system from independence to present.
Structure of foreign policymaking; selected major issues in
American foreign policy.

250 Introduction to Political Analysis (3:3:0). Systematic
analysis of political data. Application of scientific method to
political subject. Research design, methodology. Use of computer
to assist analysis of politics. Open to freshman and sophomore
majors in government, public administration, international studies.
Required for government and public administration majors.

300/PHYS 300 Nuclear Weapons: Technology and Politics
(3:3:0). Prerequisite 54 hours or permission of instructor. Study of
the history and development of nuclear weapons and nuclear
strategy, the physical basis of nuclear weapons and their biological
and physical effects, the effects of a nuclear war and the possible
effectiveness of civil defense, the possibility of limited and winnable
nuclear wars, arms control, nuclear proliferation, and public opinion
on nuclear issues. This course may not count toward
the requirements of the physics major.

301 Public Law and the Judicial Process (3:3:0). Prerequisite
54 hours. American judicial organization and operation, role of the
Supreme Court in policy formation, and selected constitutional
principles.

303 Contemporary Constitutional Issues (3:3:0). Prerequisite
54 hours. Contemporary issues in the application of basic
American constitutional principles. U.S. courts' interpretation and
clarification of constitutional rights and liberties in such areas as
First Amendment freedoms, equal protection of the laws, state and
national interrelationships within the federal system, and social and
economic protection and regulation.

305 Contemporary American Federalism (3:3:0). Prerequisites
GOVT 103, 204. Legal, administrative, fiscal, and political
dimensions of evolving American federalism.

307 Legislative Behavior (3:3:0). Prerequisite GOVT 103.
Organization, processes, functions, and roles of the legislature and
its members — the U.S. Congress. Includes state legislatures and
cross-national comparisons as time and resources permit.

308 The American Presidency and Chief Executive (3:3:0).
Prerequisite GOVT 103. Institutions, authority, and duties of the
American presidency; organization of the executive staff and office;
electoral trends; tactics of presidential influence; relations with
other governmental and political institutions; comparison with other
selected chief executive positions.

309 Government and Politics of Metropolitan Areas (3:3:0).
Prerequisites GOVT 204 and 54 hours. Government, politics, and
problems of metropolitan centers and surrounding areas.

311 Political Public Opinion (3:3:0). Prerequisites GOVT 103
and 250. Nature, sources, structure, formation, expression,
transmission, change, and measurement of politically relevant
public opinion in a democratic system of government.

312 Political Parties and Elections (3:3:0). Prerequisite
GOVT 204. Characteristics and functions of political parties, influence
of parties and other political forces on electoral decisions, emphasis
on parties' ability or inability to hold government accountable
citizens.

318 Interest Groups and the Political Process (3:3:0).
Prerequisite GOVT 103. The role, internal operations, strategies,
and activities of interest groups. Evaluation of their ability to enable
citizens to influence or control government, and to enhance the
democratic process. Consideration of conditions under which
social movements become, or fail to become, effective interest
groups.

320 Political Values (3:3:0). Prerequisite 54 hours. Nature of
man, origin and nature of the state, bases of political obligation,
problems of consent, concepts of power, and sources of political
authority as presented in the works of major writers.

331 Government and Politics of Latin America (3:3:0).
Prerequisite 54 hours. Contemporary political systems of Latin
America, with emphasis on institutions, political processes, political
behavior. Case studies of several key Latin American politics.
Problems of political development in Latin America.

332 Government and Politics of the Middle East and North
Africa (3:3:0). Prerequisites GOVT 132 and 54 hours. Societies of
the Middle East and North Africa and their response to the impact
of internal sociocultural-political determinants and external
forces. Focus on their contemporary politics — ideologies, popular
manifestations, institutions, and operations.

333 Government and Politics of Asia (3:3:0). Prerequisite
54 hours. Government structures and political processes of Asian
countries. Major problems of nation-building and competitive
approaches to revolution and reform. Problem of growth and
security in the context of a rapidly changing world.

334 Government and Politics of Western Europe (3:3:0).
Prerequisites 54 hours, GOVT 103, or permission of instructor.
Contemporary democratic political systems of Western Europe,
with emphasis on political processes, institutions, and behavior.
Case studies of key Western European politics. Problems of
Government and Politics 183

335 Government and Politics of Canada (3:3:0). Prerequisite 24 hours or permission of instructor. Survey of the historical, institutional, party, and political systems of Canada, including political parties, parliaments, the federal system, and specific policy issues of importance to Canadian politics.

336 Political Development and Change (3:3:0). Prerequisite 54 hours. Process of political development and change in the context of modernization and industrialization. Patterns of political development, with emphasis on the Third World.

337 Ethnic Politics in Western Europe and North America (3:3:0). Prerequisite GOVT 103 or 133, or permission of instructor. Study of the resurgence of ethnic nationalism in the industrial democracies of Western Europe and North America; the interplay of industrialization and ethnic awareness; the comparative analysis of policy issues related to ethnonationalism; case studies drawn from the industrial democracies.

339 Selected Issues in the Politics of Advanced Industrial Societies (3:3:0). Prerequisite GOVT 103 or 133, or permission of instructor. Study of selected current political issues in the industrial democracies of Western Europe and North America. Specific topics will be chosen each semester to reflect contemporary political concerns in these countries, but the political process in advanced industrial countries will be the organizing principle throughout the course.

340 Advanced International Relations (3:3:0). Prerequisite GOVT 132 and 54 hours. Advanced inquiry into international relations. Theories and concepts of international relations. Major forces and issues in international politics.

341 Methods of International Relations Research (3:3:0). Prerequisite GOVT 132, 340. Systematic research in international relations: identification of problems, research design, research techniques, and research report. Examples of applied research.


344 American Foreign Policy (3:3:0). Prerequisites GOVT 132, HIST 122. The central issues surrounding the conduct of America's foreign relations, with special emphasis on structural and constitutional questions, national policy objectives abroad, and the conduct of foreign policy in a democracy.

355 Public Personnel Administration (3:3:0). Prerequisites GOVT 241 and 54 hours or permission of instructor. Techniques and tools employed in the management of personnel in government organizations, including the merit system, recruiting, placement, career systems, public pay systems, employee motivation, public employee labor relations, employee appraisals, management of governmental personnel function, management of human resources, conditions of employment, recruitment, training, selection, evaluation, leadership, promotion, discipline, and collective bargaining.

372 Police Supervision (3:3:0). Prerequisite Open to pre- and in-service law students and by permission of instructor. Police supervision as related to organizational environment and goals and to employee discipline, morale, safety, training and career development, cooperation, and behavior.

376 Collective Bargaining in the Public Sector (3:3:0). Collective bargaining and the broad concept of labor relations as involved in selection and hiring, seniority, promotions, and training. Labor relations and the bargaining process extending from initial hiring to retirement.

377 Public Safety Officers and the Law (3:3:0). Law applicable to fire and police protection, fire fighters, and police officers and their relationship to the public, their employers, the courts, and other societal institutions. Rights and obligations of the uniformed services in tort and criminal law, historical development of each, Virginia law, and other local topics.

378 Risk and Insurance (3:3:0). Elements of risk control and management, applications of the same to the fields of insurance including fire, liability, accident, crime, surety, and property insurance.

401 Public Policy Making (3:3:0). Prerequisite 54 hours. Processes, agencies, and policies involved in the proposal, making, implementation, evaluation, and revision of public policy in the United States.

402 Public Policy in Metropolitan Areas (3:3:0). Prerequisite GOVT 204. Metropolitan political problems and specific policies to deal with them. Substance and impact of such policies as housing, transportation, land use, crime prevention, service delivery, and health care.

403 Public Policy Analysis (3:3:0). Prerequisite GOVT 250 or permission of instructor. Methods of public policy analysis, evaluation, and research. Design and development of alternative courses of government action and evaluation of results. Problems in applying systematic analysis to public issues.

410 The Individual Citizen in a Democracy (3:3:0). Prerequisite GOVT 103. Advanced inquiry into international relations: identification of problems, research design, research techniques, and research report. Examples of applied research.


416 Political Persuasion and Propaganda (3:3:0). Prerequisite GOVT 103. Techniques and processes of political argument and persuasion as used in campaigns, public education, and political debate. Propaganda in both domestic and international arenas. Political persuasion, myths, and symbols as used to induce conformity and form unified polity. Films and tapes supplement examples of classic political speeches.

420 American Political Thought (3:3:0). Prerequisites GOVT 103 and 54 hours. Major political values and theories in America from the formation of the American Republic to the present. Changes in American political values in crisis periods and contemporary American political theory, including pluralism, elite theories of democracy, and empirical political theory.

421 Contemporary Political Ideologies (3:3:0). Prerequisite 54 hours. Study of political ideologies which shape the values, beliefs, and actions of contemporary regimes and political movements. Liberalism, conservatism, socialism, communism, and fascism in theory and in contemporary practice. Problems of totalitarianism and nationalism in post-industrial and developing societies.

430 Comparative Political Leadership (3:3:0). Prerequisite 54 hours. Comparative political leadership, relationships between political cultures and types of leadership, patterns of leadership recruitment, and the nature of political elites and citizenry.

431 Information Technology and the Political Process (3:3:0). Prerequisite GOVT 103 or 133 or junior standing as a major in communication or permission of instructor. Study of the impact of
the information network of wire and wireless communications and computers on the political process in advanced industrial countries. Same as COMM 431.


446 International Law (3:3:0). Prerequisites GOVT 132 and 54 hours. Nature, sources, and subject of the law of nations; the law and the individual; territorial questions; international transactions; war and the present and future status of international law.

449 Senior Seminar in International Studies (3:3:0). Prerequisite Open only to majors in International Studies with 84 hours. An integrative seminar that draws previous course material into one analytical framework and provides the opportunity for in-depth study of some aspect of international studies. Format varies, but involves the student in the current literature, research techniques, and major issues of the field.

451 Administrative Management and Behavior (3:3:0). Prerequisites GOVT 241 and 54 hours. American governmental administration: organizational theory and behavior, administrative responsibility, management systems, roles of the bureaucracy, and relationships between individuals and organizations.

452 Administrative Law and Procedures (3:3:0). Prerequisites GOVT 241 and 54 hours. Law of public office; procedures followed by, and the legal limits on, the administrative agencies and their officers and employees.

459 Information Resources Utilization and Management in Government (3:3:0). Prerequisites GOVT 359 or equivalent. Information, records, paperwork, and knowledge systems in government; information applications, access, preservation and security; high technology development, management and utilization; sociotechnical systems.

461 Citizen Participation in the Policy Process (3:3:0). Prerequisite GOVT 204. The ways in which citizens participate in the policy process with an emphasis on recent innovations. Research skills to study participation in the local community, and experience in group process skills.

462 Political Campaign Organization (3:3:0). Prerequisites GOVT 103 and 54 hours or permission of instructor. Campaign practices and techniques, including candidate recruitment and selection, campaign organization, utilization of volunteers, financing, polls, and media techniques. Implications of various campaign practices for the American political system.

463 Lobbying and the Policy Process (3:3:0). Prerequisites GOVT 103 and 54 hours or permission of instructor. Lobbying techniques, activities, and characteristics of interest groups and the implications of their political behavior for the American political system.

471/SOCI 471 Prevention and Deterrence of Crime (3:3:0). Prerequisite 54 hours in-service status or permission of instructor. Theoretical and practical strategies for crime prevention and deterrence. Social, environmental, and mechanical developments. The police, courts, and correctional elements of law enforcement in terms of current effectiveness and future potential for crime prevention.

480 Internship (3:6:0:0). Prerequisite Open only to majors with 54 hours or 84 hours. Contact the department one semester before enrollment. Internships are approved work-study programs with specific employers. Credits is determined by the department.

490 Seminar (3:3:0). Prerequisite Open to public affairs majors with 54 hours or 84 hours, and by permission of department to others with 84 hours who have completed at least 12 hours of work in government. May be repeated for elective credit. Subject varies according to the specialization of the faculty member in charge. Readings, individual or group projects, and discussions of seminar papers comprise the content and format. Only three credit hours may be counted within the major program.

496 Directed Readings and Research (1-3:3:0). Prerequisites Open to majors in public affairs with 84 hours and permission of instructor and department. Reading and research on a specific topic, under the direction of a faculty member. A written report is required; an oral examination over the research and report may be required. May be used for elective credit only. 504 Theory and Practice of International Relations (3:3:0). Prerequisite Acceptance in MPA program and permission of department. Theoretical and health education empirical examination of the international system which both affects and is affected by the decisions, behaviors, and subsystems of state and nonstate (organizational) actors.

537 Selected Problems of Third World Development (3:3:0). Prerequisite Graduate standing or permission of department. Third World development problems, including development management, a new international economic order, foreign aid, multinational corporations, international organizations. May be repeated with permission of department.

631 The Dynamics of Development (3:3:0). Prerequisite Graduate standing or permission of department. Factors and forces — both internal and external — that affect the political development of Third World countries, including North-South relations, dependencia theory, and development strategy within the context of resource scarcity.

Greek Courses (GREE)

Foreign Languages and Literatures

Placement: See Admission Procedures.

101, 102 Elementary Greek (3:3:1), (3:3:1). Grammar of the language and easy excerpts from classical authors. Development of ability to read. Discussion of elements of English vocabulary drawn from Greek. Must be taken in sequence.

201, 202 Intermediate Greek: Readings in Classical Literature (3:3:1), (3:3:1). Prerequisite GREE 102 or equivalent. Review of grammar. Development of proficiency in reading, with emphasis on traits of syntax, vocabulary, dialect or style that will be met in authors to be read. Must be taken in sequence.

Health Education Courses (HEAL)

Health, Sport, and Leisure Studies

110 Personal Health (3:3:0). Individual and family well-being through the integration of such topics as fitness, nutrition, human sexuality, consumer health, drug education, and mental health.

111 Advanced First Aid & Emergency Care (2:1:2). Identification, care, and treatment of various medical emergencies.

120 Community and Environmental Health (3:3:0). Environmental health concerns and organization of community health programs of official and voluntary local, state, and national health programs. Field observation required.

205 Principles of Accident Causation and Prevention (3:3:0). Investigation of safety-related problems; emphasis on fire, home, occupational, and vehicle safety; violent and property crime prevention.

220 Dimensions of Mental Health (3:3:0). Integration of behavioral and sociocultural factors in the study of mental health.

305 Health Education in the Elementary School (3:3:0). Designed for elementary education students with emphasis on content, methodology, and resource materials in health teaching.

310 Drugs and Health (3:3:0). Prerequisite HEAL 110. Analysis of drug use, with emphasis on its positive aspects; alternatives to drug misuse and abuse.

315 Foundations of Health Education (3:3:0). Prerequisites HEAL 110 and 120, or permission of instructor. Historical and philosophical foundations of health education with emphasis on principles and theories governing contemporary programs.

323 Community Health Education Programs (3:3:0). Prerequisite HEAL 120 or permission of instructor. Organization and principles in planning, developing, implementing, and evaluating

http://catalog.gmu.edu
community health education programs.


402 Introduction to Driver Education: Driver Task Analysis (3:2:3). Prerequisite HEAL 205. Vehicle operator's task including lab experiences in the use of psycho-physical and psychological tests.

414 Student Teaching in Health Education (9:12:0). Prerequisites: Completion of all courses in the approved program; admission to, and good standing in, the Teacher Education Program. An intensive, supervised clinical experience of a full semester in an approved school in Virginia. Experience at the secondary level.

430 Seminar on Contemporary Health Problems (3:3:0). Overview of contemporary and often controversial health issues with analysis of selected problems of current concern to society.

440 Health Education Methods (3:3:0). Prerequisite Health Education major or permission of department. Instructional strategies, lesson and unit plan development, resource materials, and evaluation techniques for secondary school health education. 10 hours field experience required.

450 Epidemiology (3:3:0). Study of the incidence, distribution, and causes of diseases and injuries in human populations. Emphasis is on essential diagnostics and planning for community health problem solving.

460 Internship in Community Health Education (12-15:0:0). Prerequisite Permission of chair. Directed experience to observe and participate in the health education activities of a community health agency or professional health organization in cooperation with approved agency.

480 Special Topics (1-3:3:0). Selected health issues and/or problems are presented for each specific "Special Topics" course. Application of information to education programs receives special attention.

499 Independent Study in Health Education (1-3:0:0). Prerequisites 84 hours and permission of department. Study of a problem area in health education research, theory, or practice under faculty direction. May be repeated but no more than three hours total credit may be given.

500 Workshop in Health Education (1,2,3:3:0:0). Analysis of selected health problems and issues involving readings, research, and group attention. Six semester hours of HEAL 500 may be applied to degree credit.

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). Prerequisite Baccalaureate degree in health education or related field, or permission of chair. 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). Prerequisite Baccalaureate degree in health education or related field, or permission of chair. 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). Prerequisites 3-hour 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). Prerequisite Permission of department. Study of a problem area in health education research, theory, or practice under direction of faculty. May be repeated, but no more than three hours total credit may be given.

Hebrew Courses (HEBR)

Foreign Languages and Literatures

101 Elementary Hebrew I (3:3:1). Designed for students with no knowledge of Hebrew. Introduction to Hebrew, including grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required.

102 Elementary Hebrew II (3:3:1). Prerequisite HEBR 101 or equivalent. Continuation of HEBR 101.

201 Intermediate Hebrew I (3:3:1). Prerequisite HEBR 102 or equivalent. Further development of skills acquired in HEBR 101 and 102, including grammar, oral expression, listening comprehension, reading, and writing. Lab work required.

202 Intermediate Hebrew II (3:3:1). Prerequisite HEBR 201 or equivalent. Continuation of HEBR 201. Lab work required.

History Courses (HIST)

History

100 The Uses of History (3:3:0). Primarily for nonmajors; may be taken by majors only as elective credit. Introduction to the nature of history and the historical method. Emphasis on distinguishing fact from interpretation, synthesis of historical information, and critical analysis of historical writings.

101 Foundations of Western Civilization (3:3:0). Evolution of Western culture from the ancient Mediterranean world to the formation of modern Europe in the seventeenth century.

102 Development of Western Civilization (3:3:0). History of Western institutions and ideas from the seventeenth century to the present.

121 Formation of the American Republic (3:3:0). Social, political, economic, and intellectual growth of American institutions from colonization through the Civil War.

122 Development of Modern America (3:3:0). History of the United States from 1865 to the present.

130 History of the Modern Global System (3:3:0). Studies the interaction of major world regions that, under the impact of European expansion, became integrated within a single global cultural and economic network. Beginning with a description of regional civilizations around 1500, the course focuses on cultural interaction and economic change through the eras of mercantile expansion, industrial revolution, global imperialism, and twentieth-century crises and developments.

251, 252 Survey of East Asian Civilization (3:3:0), (3:3:0). HIST 251 is a survey of the history of China and Japan from prehistoric times until ca. 1600. HIST 252 is a survey of the history of China and Japan from early modern times (ca. 1600) until the present.

261, 262 Survey of African Civilization (3:3:0), (3:3:0). HIST 261 is a survey of African history from earliest times to the decline of Western Sudanic states in the sixteenth century. HIST 262 is a survey of African history from the beginnings of interaction with Europe in the fifteenth century to the recent emergence of new states.


Course Descriptions

281, 282 Survey of Middle Eastern Civilization (3:3:0), (3:3:0). Emphasis will be placed on significant cultural, intellectual, social, and political developments. HIST 281 is a survey of the history of the major civilizations of the Middle East from ancient to medieval times (ca. 1258). HIST 282 is a survey of the history of the major civilizations of the Middle East from medieval to modern times (ca. 1258 to the present).

300 Interpretations of History (3:3:0). Required of history majors with 54 hours. Study of development of historical writing in the West from ancient to modern times. Introduction to historical methodology.

301 Classical Greece (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Political, social, economic, and cultural history of classical Greece from development of the city-state through the Hellenistic monarchies.

302 Classical Rome (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Political, social, economic, and cultural history of classical Rome from founding of the city through fall of the Roman empire.

303 Western Europe in the Middle Ages (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Survey of the development of European society from the impact of the reforms of Diocletian and Constantine to the end of the fifteenth century. Emphasis on political, institutional, economic, and social developments, including influence of the Church.

304 The Eastern Roman Empire and Byzantium (3:3:0). Prerequisite: 6 hours of history or permission of instructor. The political, social, economic, cultural, and religious history of the Eastern Roman and Byzantine empires from the Age of Constantine to the fall of Constantinople in 1453.

305 The Renaissance (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Survey considering the Renaissance as a phenomenon rather than a chronological period. Emphasis on growth of Humanism in Italy in the fourteenth and fifteenth centuries, development of new concepts, and laicization of society. Including transmission of these developments to transalpine Europe in the late fifteenth and sixteenth centuries.

306 The Reformation (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Late medieval ecclesiastical conditions and reform movements; late scholasticism; Protestant Reformation; Catholic Reformation; dynastic rivalries, and religious wars. Concludes with the Peace of Westphalia (1648).

308 Nineteenth-Century Europe (3:3:0). Prerequisite: 6 hours of history or permission of instructor. History of Europe from Congress of Vienna to outbreak of World War I.

309 Contemporary Europe (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Survey of major political changes in Europe since 1914 with emphasis on broad patterns of ideological conflict.

314 History of Germany (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Political, diplomatic, economic, social, and cultural development of Germany from the dissolution of Holy Roman Empire to present.

320 Anglo-Saxon and Medieval England (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Study of Roman Britain, Anglo-Saxon institutions, Norman Conquest, church-state relations, development of common law, rise of Parliament, War of Roses.

321 Tudor and Stuart England (3:3:0). Prerequisite: 6 hours of history or permission of instructor. England between 1485 and 1714: religious, social, and constitutional change during the English Reformation; the Stuarts and Parliament; the Civil War and interregnum; the Stuart restoration; the Glorious Revolution and the Bill of Rights; the era of Queen Anne.

322 Modern Britain from the Georgian Age to the Welfare State (3:3:0). Prerequisite: 6 hours of history or permission of instructor. England from 1714 to present: the first four Georges, growth and consequences of industrialization, reform of the franchise, foreign affairs and imperialism, transition from empire to commonwealth, the twentieth-century welfare state.

328 Rise of Russia (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Political, social, and cultural experience of Russia from the appearance of the Kievan state to the age of Pushkin.

329 Modern Russia and the Soviet Union (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Analysis of Russian civilization in nineteenth and twentieth centuries; focus on failure of socialism, revolutionary response, and development of the Soviet Union.

333 Frontier America: The Westward Movement (3:3:0). Prerequisite: 6 hours of history or permission of instructor. History of exploration, settlement, and expansion of the frontier; emphasis on influence on cultural and political institutions.

335 The Afro-American Experience in the United States: African Background to 1865 (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Brief introduction to origin of man, concept of race, impact of color on black experience, moving from the African background to the U.S. Civil War. Attention directed to the effect of transplantaion on certain African cultural survivals in the New World. Examination of genesis of American slavery and prejudice, colonial heritage, revolutionary legacy, colonization, abolitionist movement, and institutionalized slavery.

336 The Afro-American Experience in the United States: Reconstruction to the Present (3:3:0). Prerequisite: 6 hours of history or permission of instructor. General knowledge of the experience and development of black American society from 1865 to present. Focuses on the parallels between the nineteenth and twentieth centuries.

341 History of the United States Constitutional Law to 1865 (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Consideration of the development of the federal Constitution to 1865. Emphasis on Anglo-American origins in common law and American revolutionary ideology, as well as the interplay of politics and the courts. The development of broader understanding of the Bill of Rights' guarantees is a secondary theme.

342 History of the United States. Constitutional Law from Reconstruction to the Present (3:3:0). Prerequisite: 6 hours of history or permission of instructor. The history of the Constitution, its expansion and development, from 1865 to the present. Among the principal elements treated are the adoption and impact of the Fourteenth Amendment, and the consequences of war and reform on twentieth-century government.

345 From Colony to World Power: A History of American Foreign Relations (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Survey of American diplomacy from Revolutionary War to present, with emphasis on twentieth-century issues.

351 History of the Old South (3:3:0). Prerequisite: 6 hours of history or permission of instructor. History of the South to the outbreak of the Civil War, with particular emphasis on the rise of sectionalism. Development of a distinct Southern culture through emergence of economic, political, social, agricultural, and intellectual institutions.

352 The South Since 1865 (3:3:0). Prerequisite: 6 hours of history or permission of instructor. History of the South during Reconstruction, the Redeemer era and the New South, with particular emphasis on race relations. Political, economic, cultural, and intellectual development from aftermath of war.

353 History of Traditional China (3:3:0). Prerequisite: 6 hours of history or permission of instructor. China from earliest times to the period of modern Western intrusion. Development of traditional Chinese culture, society, and government.

354 Modern China (3:3:0). Prerequisite: 6 hours of history or permission of instructor. China from 1844 to the Peoples Republic of China. Emphasis on the coming of the West and the various stages of Chinese reaction.

356 Modern Japan (3:3:0). Prerequisite: 6 hours of history or permission of instructor. Japan from the Meiji Restoration to World War II. Emphasis on Japan's modernization in the face of challenge.

363 The History of Argentina, Brazil and Chile (3:3:0). Prerequisite: HIST 271 or permission of instructor. Intensive study of evolution of Argentina, Brazil, and Chile from the Colonial period to the present with emphasis on changing social, political, and economic conditions.
379 History of Canada (3-3-0). Prerequisite 6 hours of history or permission of instructor. Introduction to history of Canada from French settlement to present. Emphasis on Canada's historical position in the British Empire and Commonwealth, its unique relations with the United States, and issues related to its French-speaking minority.

390 Topics in History (3-3-0). Study of historical topics or periods of special interest. Topics announced in advance. This course may be repeated for credit when topic is different and with permission of department.

391 History of Virginia to 1860 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Discovery and settlement of Virginia. Emphasis on development of representative government and race relations, the "Golden Age" of the Virginia dynasty, coming of Civil War.

392 History of Virginia Since 1860 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Decision to secede, Civil War and Reconstruction, Readjusters and Populism, disfranchisement and Constitution of 1902, rise of Senator Harry F. Byrd. Recent developments.

393 History through Film (3-3-0). Study of historical periods or topics from perspective of feature films and documentaries. Topics available in advance in History Department. May be repeated with permission of department. Maximum of six hours may be applied toward the history major.

394 History of the Family in the United States and Europe, 1500-Present (3-3-0). Historical development of Western family life. Topics include attitudes toward infants and children, role of family in educating youth and in influencing marriage choice, relationship between parents and adult children, and interaction between nuclear and extended family. Change in family behavior in the context of wider social transformation.

395 History of Western Science I: Antiquity to the Age of Galileo (3-3-0). Prerequisite 54 hours or permission of instructor. Examination of the foundations and development of scientific thought in Western Europe from antiquity to the seventeenth century. Emphasis will be on the historical context of science. No advanced background in mathematics or natural sciences is required.

396 History of Western Science II: From the Scientific Revolution to the Twentieth Century (3-3-0). Prerequisite 54 hours or permission of instructor. Examines the foundations and development of scientific thought in Western Europe from the scientific revolution of the seventeenth century to the twentieth century. Emphasis will be on the historical context of science. No advanced background in mathematics or natural science is required.

398 The Social History of Technology (3-3-0). Prerequisite 54 hours or permission of instructor. Examines the foundations and development of scientific thought in Western Europe from the scientific revolution of the seventeenth century to the twentieth century. Emphasis will be on the historical context of science. No advanced background in mathematics or natural science is required.

401 Colonial America (3-3-0). Prerequisite 6 hours of history or permission of instructor. Intensive study of colonial American history from its European origins through the Revolutionary War.

403 Early National Period in American History, 1783-1820 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Study of formative years of the new republic from the Treaty of Paris of 1783 to the election of 1820.

404 Jacksonian Democracy, 1820-1848 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Study of the age of Andrew Jackson; emphasis on democratic institutions that emerged as dominant influences in American society.

406 Civil War and Reconstruction (3-3-0). Prerequisite 6 hours of history or permission of instructor. Course, conduct, and consequences of the American Civil War and aftermath. Emphasis on interconnectedness of political, military, and economic affairs.

409 Between the Wars: The United States, 1919-1941 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Intensive study of political, social, economic, and diplomatic developments in the 1920s and the 1930s.

410 The United States Since World War II: Nation and Empire (3-3-0). Prerequisite 6 hours of history or permission of instructor. Examination of major domestic and foreign policy factors that shaped American experience from World War II to present. Political, social, and economic forces as they affected the nation's history.

411 Cultural and Intellectual History of the United States: 1600-1865 (3-3-0). Prerequisite 6 hours of history or permission of instructor. Cultural and intellectual currents to 1865.

412 Cultural and Intellectual History of the United States Since 1865 (3-3-0). Prerequisite 6 hours of history or permission of instructor. American thought and society from 1865 to present. Effect of industrialization on American institutions; development of a business "credo"; growth of radical thought in economics, politics, and religion; changes in social structure; increasing power and influence of the state.

413, 414 War and the Military in American Life (3-3-0), (3-3-0). Prerequisite 6 hours of history or permission of instructor. Study of impact of war on American society; its influence on the shaping of national policy. Topics include role of the military in the economy, minorities in the armed forces, development of peace movements. The first semester covers colonial times to about 1917; the second semester covers American entry into World War I through the Vietnam conflict.

415 United States Urban History: Colonial Origins to Civil War (3-3-0). Prerequisite 6 hours of history or permission of instructor. Study of American urbanization focusing on origin and growth of colonial towns, the urban role in fostering nationalism, and economic rivalries during the transportation and communications revolutions. Attention to the regulations and social, economic, and environmental problems of rapid urbanization.

416 United States Urban History: Civil War to the Present (3-3-0). Prerequisite 6 hours of history or permission of instructor. Urban problems that ensued from the rapid growth of America after the Civil War.

420 Topics in Twentieth-Century U.S. Diplomacy (3-3-0). Prerequisite 6 hours of history or permission of instructor. Topics vary and are available in advance at the History Department.

431/ENGL 431 Medieval Intellectual Topics (3-3-0). Prerequisite 6 hours of history or permission of instructor. Selected topics in the intellectual history of the Middle Ages. Topics vary, depending on discipline of instructor. May be taken for credit by English, History, or area studies majors.

435 Social Transformation and Culture in Seventeenth- and Eighteenth-Century Europe (3-3-0). Prerequisite 6 hours of history or permission of instructor. Examination of the cultural lives of Europeans. Focus on religious, artistic, literary, and recreational behavior. In addition, political activity—riots and royal receptions, work stoppages, and chivalric disputes—are covered. Includes formal thinkers and grand cultural elites, and examines differences and interrelationships between the two.

436 European Society and Culture: Nineteenth and Twentieth Centuries (3-3-0). Prerequisite 6 hours of history or permission of instructor. Examination of major cultural trends in Europe since the French Revolution. Major themes include romanticism; socialism; Marxism; the social effect of modernization, science, and societies.

440 France, 1610-1789: Absolutism and Revolution (3-3-0). Prerequisite 6 hours of history or permission of instructor. Survey of French history from 1610 through the establishment, perfection, and decline of monarchical absolutism, to the opening stages of the Revolution.

441 France Since the Revolution (3-3-0). Prerequisite 6 hours of history or permission of instructor. Study and influence of domestic, foreign and cultural developments in France from 1789 to present.

443 History of Spain and Portugal (3-3-0). Prerequisite 6 hours of history or permission of instructor. Development of the Spanish and Portugal from prehistoric to modern times, noting particularly factors related to their former empires in America.

451 The United States and China (3-3-0). Prerequisite 6 hours of history or permission of instructor. History of foreign relations between U.S. and China in nineteenth and twentieth centuries, with emphasis on causes of their cooperation and conflict.

455/COMM 455 History of Print Journalism (3-3-0). Prerequisite 3 hours COMM or HIST credit. Development of print journalism.
from its inception to the present, with emphasis on the interaction of technology, audience, and government intervention. Topics include birth of the press, development of the modern newspaper and American development, including the Revolutionary and Civil Wars; the rise of the independent press; and the Yellow Journalism period.

463 Ancient India and Pakistan (3-3-0). Prerequisite 6 hours of history or permission of instructor. History of Indo-Pakistan subcontinent with special reference to Indus Valley people, Hindus, Jains, Buddhists, and Muslims from ancient to medieval times.

464 Modern India and Pakistan (3-3-0). Prerequisite 6 hours of history or permission of instructor. Political history of Indo-Pakistan subcontinent from mid-eighteenth century to present. Background of earlier cultures of Hindus and Muslims as prelude to developments in modern periods.

465 The Middle East in the Twentieth Century (3-3-0). Prerequisite 6 hours of history or permission of instructor. Political, social, and cultural history of the Middle East since World War I. Emergence of Israel, Arab nationalism, and political and economic influence of the Middle East in world affairs.

466 Origins of Conflict in Southern Africa (3-3-0). Explores the historical origins of conflict in South Africa, focusing on themes of economic change, cultural interaction, and political consolidation over the past five centuries.

470 Diplomacy and War in Latin America (3-3-0). Prerequisite 6 hours of history or permission of instructor. Balance of power diplomacy among nations states of Latin America from independence to present. Emphasis on sources of conflict.

475 History of Mexico (3-3-0). Prerequisite 6 hours of history or permission of instructor. Intensive study of Mexican history from pre-Columbian era to present, with emphasis on the national period.

478 Spanish Borderlands (3-3-0). Prerequisite 6 hours of history or permission of instructor. U.S. frontier from Carolinas to Pacific considered as a part of the Kingdom of New Spain and, later, the United Mexican States, 1500-1848; expeditions of discovery, exploration, and settlement; political, cultural, and social developments; foreign encroachment; incorporation of the area into the U.S.; and origins of present Mexican-American minority.

480 Alexander the Great (3-3-0). Prerequisite 6 hours of history or permission of instructor. Rise of Persia, the Persian wars with Greece, subjugation of Greece by Philip II of Macedonia, life of Alexander the Great and his conquest of the Persian empire.

495 Racism in the United States: A Seminar (3-3-0). Prerequisite 84 hours, 6 hours of history or permission of instructor. Manifestations of racism in U.S., as directed against Indians, Orientals, Jews, Mexican-Americans, and Afro-Americans.

496 Internship (3-6:0-0). Prerequisite History majors with 54 hours and permission of department. Internships are approved work-study programs in cooperation with specific organizations including area museums; archives, historic sites; and local, state, and federal agencies. Credit determined by department.

498 Directed Readings/Research in History (1-3-0). Prerequisite History majors with 84 hours and permission of instructor. Readings/research conducted on an individual basis in consultation with instructor. A student may not present more than three hours for graduation credit.

499 Senior Seminar in History (3-3-0). Prerequisite History majors with 84 hours and permission of instructor. Research on a specialized historical topic culminating in a seminar paper. Subject determined by instructor. Permission must be obtained in advance. A student may present not more than three hours for graduation credit.

Information Resource Management (IRM)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the School of Business Administration (except general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

201 Introduction to Computer-Based Management Information Systems (3-3-0). Prerequisite CS 161 required and MATH 108 recommended. Introduction to the components of the management information system (MIS) and their integration for managerial control and decision support. Analysis, design, and implementation of MIS software. Microcomputer lab for database and spreadsheet applications.

403 Computer Systems Analysis and Design (3-3-0). Prerequisite IRM 201. Treatment of the life cycle of a computer information system with emphasis on information requirements analysis, feasibility studies, economics, systems design, equipment selection, and the implementation process. Term project required. Computing lab.

410 Managerial Applications of Microcomputers (3-3-0). Prerequisite IRM 201. Selection and use of microcomputer hardware and software management for applications. Word processing, spreadsheet analysis, graphics, communications, file management, and database management. Term project and microcomputing lab.

411 Management Information Systems (3-3-0). Prerequisite ACCT 202, IRM 201, DESC 202. Capstone course in MIS for all SBA disciplines. Integration of computation and management information disciplines in various administrative application situations. Includes graphics, decision support systems, and the use of microcomputers. Students design and implement aspects of an MIS for an organization. Computing lab and term project.

420 Business Data Communications (3-3-0). Prerequisites DESC 201, INFS 210. Broad introduction to business data communications. Emphasis on the integration of data communications into the automated business office. Term project.

440 Business Applications of Artificial Intelligence (3-3-0). Prerequisites DESC 201, INFS 310 or INFS 202 or IRM 411. Essential steps in knowledge engineering; what knowledge-based systems are, and how to manage development of knowledge-based systems. Course will also touch upon the evaluation and integration of knowledge-based systems into existing environments, as well as how to maintain and evolve a knowledge-based system.

491 Seminar in Information Resource Management (3-3-0). Prerequisite Completion of all other required courses for a major in information resource management. In-depth analysis of selected topics that highlight the latest developments in the information Resource Management field, including contemporary research findings and case studies of information systems in business and other organizations.

492 Field Experience in Information Resource Management (3-3-0). Prerequisites Senior standing and permission of instructor. This educationally relevant, faculty-governed field experience gives students an opportunity to become involved in addressing actual challenges encountered by Northern Virginia businesses. Working through the Entrepreneurship Center, each client firm will be matched with a team of students assigned to propose action plans relating to a major problem or opportunity faced by the company.

499 Independent Study in Information Resource Management (1-3-3-0). Prerequisite information resource management majors with at least 9 upper-level information resource management or information systems credit hours. Research and analysis of selected problems or topics in information resource management. Must be arranged with an instructor and receive written approval of chair before registration. Written report required. May be repeated to a maximum of six hours if topics vary.
Information Systems Courses (INFS)

Information Systems and Systems Engineering

310 Program Structure and Design Using COBOL (3:3:0). Primarily for business students. Programming using the COBOL and RPG II languages to focus on fundamental concepts of software design and software development methodologies for database management. Computing lab.

311 Database Management (3:3:0). Prerequisite INFS 310. Study of the logical and physical characteristics of data and its organization in computer processing. Emphasis on data as a resource in computer applications. Examination of Database Management System (DBMS) software and its design, implementation, and use. Lab exercises using one or more DBMS for business applications. Computing lab.

312 Computer Architecture and Operating Systems (3:3:0). Prerequisite INFS 310. Introduction to computing system hardware components, architecture, organization, and operating system software concepts. Provides basic experience in assembly language programming for modern microprocessors and examines techniques for system evaluation and selection. Computing lab.

315 High-Level Programming Languages (3:3:0). Prerequisite INFS 312. Study of the structure and application of high-level languages by stressing the design and implementation of data types, data structures, and algorithms. Computing lab.


422 Data Communications Systems and Networks (3:3:0). Prerequisites INFS 311 and 312. Introduction to the concepts and design issues in data communications systems. Emphasis is on the impact of communications technology on information systems. Term project.

491 Seminar in Information Systems (3:3:0). Prerequisite Permission of instructor. In-depth analyses of selected topics which highlight the latest developments in information systems, including contemporary research findings and case studies of information systems.

492 Special Topics in Group Project Implementation (3:3:0). Prerequisite 6 hours of INFS or CS programming courses including INFS 312 or equivalent. Examines computer system design practices and project management concepts, and gives students practical experience working on an information systems engineering project. With faculty guidance, students participate in a team design and implementation project. Typical projects are (1) an office automation system, (2) a student records information system, or (3) a software design and management effort.

499 (formerly BUAD 499) Independent Study in Information Systems (1-3:3:0). Prerequisite Decision sciences majors with at least nine upper-level information systems credit hours. Research and analysis of selected problems or topics in information systems. Must be arranged with an instructor and written approval of chair received before registration. Written report required. May be repeated to a maximum of six hours if topics vary.

Japanese Courses (JAPA)

Foreign Languages and Literatures

101, 102 Introduction to the Japanese Language (3:3:1), (3:3:1). Must be taken in sequence. Introduction to Japanese, including basic grammar, oral expression, listening comprehension, and reading and writing. Lab work required.

201 Intermediate Japanese I (3:3:1). Prerequisite JAPA 102 or permission of department. Further development of skills in listening, speaking, reading, and writing. JAPA 201 and 202 must be taken in sequence. Lab work required.

202 Intermediate Japanese II (3:3:1). Prerequisite JAPA 201 or permission of department. Application of language skills to reading, composition, and discussion. Lab work required.

Korean Courses (KORE)

Foreign Languages and Literatures

361, 362 Korean Literature (3:3:0), (3:3:0). Prerequisite Knowledge of Korean language. Survey of Korean literature from the Three Kingdoms period to the twentieth century. Study of vernacular genres of verse and prose. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

450, 451 Korean Culture and Civilization (3:3:0), (3:3:0). Prerequisite 54 hours or permission of instructor. Korean culture and civilization, including language, philosophy, religion, education, and family life; discussion of problems of cross-cultural understanding. Course work in English. For non-Western credit.

LAC Courses (LAC)

See "Regional Cultures."

Latin Courses (LATN)

Foreign Languages and Literatures

Placement: See Admission Procedures.

101, 102 Elementary Latin (3:3:1), (3:3:1). Must be taken in sequence. Introduction to Latin, including basic grammar and development of reading skills; introduction to Latin literature and Roman civilization.

201 Intermediate Latin: Prose and Poetry (3:3:1). Prerequisite LATN 102 or equivalent. Intensive review of elementary grammar; introduction to more advanced grammatical constructions and patterns of usage; continued development of reading proficiency; study of origin and development of Latin literature.

202 Intermediate Latin: The Golden and Silver Ages (3:3:1). Prerequisite LATN 201 or equivalent. Study of advanced grammatical constructions and patterns of usage; reading selection from various Latin authors who flourished during the late
Republic and early Empire of Rome; study of the cultural and political background of classical Latin authors.

321, 322 Latin Tutorial (1-3:0:0). Prerequisites LATN 202 or equivalent and permission of department. Readings in Latin drawn from classical authors or genres of choice.

351 Latin American Studies Courses (LAS)

Area Studies

489 Independent Study (1-6:0:0). Prerequisites 54 hours, permission of chair and instructor. Intensive study of a period, problem or project related to Latin American Studies proposed by an individual student, to be conducted in close consultation with a LAS faculty member. May be repeated for a total of six credits.

490 Internship (2-6:0:0). Prerequisite 54 hours and permission of chair. Internships are nonpaying, work-study positions that focus on interdisciplinary LAS issues. Qualified students are placed with area institutions, interest groups, agencies, museums, or corporations. Placement depends upon availability of positions.

491 Contemporary Latin America (3:3:0). Required of LAS majors with 84 hours or permission of instructor. Interrelationship of economic, political, social, and cultural factors in explaining current Latin American reality. Topic announced. May be repeated for credit provided that course subtitle is different.

Management Courses (MGMT)

School of Business Administration

If a student takes noncore upper-level business administration courses prior to acceptance to junior standing, those courses will not count on an undergraduate degree application for any major in the school (except as general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

301 Organizational Behavior and Administration (3:3:0). Prerequisites COMM 100 or 101 or 130 and 60 hours or permission of instructor. Review and application of major theoretical issues in organizational behavior. Analysis and critique of research methods used in the field. Particular emphasis on micro factors and their application to development of effective managerial styles.

311 Management of Organizations (3:3:0). Prerequisites MGMT 301 or permission of instructor. Principles of management, emphasizing managerial functions. Fundamentals of organization theory and behavior and how they affect the management of organizations, domestic and international.

321 Personnel Administration (3:3:0). Principles and procedures related to recruitment and selection of a labor force, grievance and disciplinary procedures, problems involved in collective bargaining, pay policies, merit rating, promotion, and training. Emphasis on their relationship to management.

321 Labor-Management Relations (3:3:0). Examination of American trade unions and of unionism. The labor contract; the bargaining processes; the philosophy of unionism; the use of bargaining techniques for nonwage issues; the legal context of labor-management relations; the responsibilities and duties of unions and management; the political-economic impact of unionism.

341 Business Communication (3:3:0). Introduction to theory and practice of effective business communication. Includes inquiry into principles of communication, communicating through correspondence and reports, and business research methods.

381 Management Problem Solving and Decision Making (3:3:0). Prerequisite MGMT 301. Application of principles and techniques of management to cases drawn from business, public, and nonprofit organizations. Emphasis on internal management of organizations, applications of systems theory and methodology, and techniques used to analyze problems effectively.


421 Advanced Personnel Administration (3:3:0). Prerequisite DESC 202 and MGMT 321. In-depth, experience-based examination of the more complex areas of personnel administration; job and task analysis, performance appraisal, selection and placement, wage and salary field of personnel administration.

431 Labor Legislation and Collective Bargaining (3:3:0). Prerequisite MGMT 331. Study of the institutional framework of collective bargaining, with two distinct focuses. The first is on major pieces of legislation from Common Law to the present day, the second includes an in-depth analysis of collective bargaining and its relationship to participation, research, techniques, issues, and legal environment, and evaluation of the contract.

451 (351) Small Business Management (3:3:0). Prerequisites ACCT 201, 202, and MGMT 301, or permission of instructor. Study of the entrepreneur and entrepreneurial organizations. Emphasis on the entrepreneurial process and social, economic, and cultural factors affecting behavior. Problems facing the small businessman in a variety of contexts, in particular, heavy technology and service-related businesses.

471 Organizational Management and Environmental Change (3:3:0). Prerequisite BULE 401. An examination of organizational management concepts and applications in response to changing environments. The organizational impact of various stakeholders, as well as the interaction between organizations and processes will be reviewed. Management practices, structures, and processes will be emphasized.

481 Business Interviewing (3:3:0). Prerequisite MGMT 301. Study of management and concepts relevant to business interviewing. Relevant theory, examples, and exercises that demonstrate the nuances of the most commonly used forms of the business interview will be introduced. Focus on survey, selection, appraisal, counseling, discipline, and exit interviews from the perspective of the interviewer.

491 Seminar in Management (3:3:0). Prerequisite MGMT 301, MGMT 331, 90 hours, or permission of instructor. Advanced study of management concepts and selected topics, intensive analysis of management problems which represent long-term strategic significance or current urgency for organizational planning and operations. Significant contemporary research findings.

492 Field Experience in Management (3:3:0). Prerequisites Senior standing and permission of instructor. This educationally relevant, faculty-governed field experience gives students an opportunity to become involved in addressing actual challenges encountered by Northern Virginia businesses. Working through the Entrepreneurship Center, each client firm will be matched with a team of students assigned to propose action plans relating to a major problem or opportunity faced by the company.

498 Business Strategy and Policy (3:3:0). Prerequisites Final semester and FNAN 301, MGMT 301, MKTG 301. A capstone course designed to acquaint the student with the nature of strategic management and the shaping of business policy. Emphasis on managerial decision making as it relates to business strategy formation and implementation in large, medium, and small enterprises, both domestic and international.

499 Independent Study (1-3:0:0). Prerequisite Management majors with at least 9 upper-level management credit hours. Research and analysis of selected problems or topics in management must be arranged with an instructor and receive written approval of chair before registration. Written report required.
Mathematics Courses (MATH)

Mathematical Sciences

Knowledge of high school algebra is prerequisite for all mathematics courses. In exceptional cases the prerequisite for a course above the calculus sequence may be waived at the discretion of the instructor.

101 Algebra and Elementary Functions (3:3:0). Meets three hours per week. No degree credit is given; however, tuition and fees are charged for three hours. Basic algebraic manipulations. Linear equations and graphing. A study of the properties of polynomial, logarithmic, exponential, trigonometric functions.


108 Introductory Calculus with Business Applications (3:3:0). Functions, limits, the derivative, the integral. Applications of differentiation and integration. Students who have received credit for MATH 113 or 115 may not receive credit for this course.

110 Finite Mathematics (3:3:0). Elementary set theory, probability, and statistics.


113 Analytic Geometry and Calculus I (4:4:1). Prerequisite: Thorough understanding of high school algebra and trigonometry. Functions, limits, the derivative, maximum and minimum problems, the integral, conic sections.

114 Analytic Geometry and Calculus II (4:4:1). Prerequisite: C or better in MATH 113. Transcendental functions, methods of integration, infinite series, analytic geometry.

125 Discrete Mathematics I (3:3:0). Introduction to the ideas of discrete mathematics. Topics include logic, proof techniques, sets, graphs and trees, and techniques of enumeration.

209 Introduction to Mathematical Modeling (3:3:0). Prerequisite: C or better in MATH 114. Calculus-based introduction to discrete and continuous models in the natural and social sciences. Topics

Marketing Courses (MKTG)

School of Business Administration

If a student takes noncore, upper-level business administration courses prior to acceptance to the School of Business Administration, those courses will not count on an undergraduate degree application for any major in the school (except as general elective credit). A grade of C or higher must be presented on the graduation application for each upper-level course in the 18-hour major.

300 Contemporary Marketing for Nonbusiness Majors (3:3:0). A survey of the marketing of goods, services, and ideas in the economic, social, and international environment. Attention is given to public, private, for-profit and not-for-profit organizations and how the management of the marketing function is performed. (Note: This course may not be taken for credit by business majors.)

301 Principles of Marketing (3:3:0). Prerequisites ACCT 201, 202, and ECON 103, 104, or permission of instructor. Examination of marketing principles, concepts, strategies, tactics, and analytical tools used by profit and nonprofit organizations to market ideas, products, and/or services to selected target groups. Emphasis is on how to promote, distribute, and price the firm's offering in a dynamic economic, social, political, and international environment.

310 (331) Business and Government Logistics (3:3:0). Prerequisite MKTG 301 or permission of instructor. Overview of the physical distribution and logistics management systems in business and government. Attention is given to transportation and traffic management; warehouse, distribution centers, and plant location; and packaging and materials handling. Topics include activities required in design, test, and evaluation; production/construction, operational support, and retirement/disposal of business products; and major government systems.

311 Sales Management (3:3:0). Prerequisite MKTG 301 or permission of instructor. Examination and evaluation of the sales effort as it relates to the consumer and participants within the marketing channel.

312 Consumer Behavior (3:3:0). Prerequisite MKTG 301 or permission of instructor. Marketing strategy implications of the concepts and propositions that compose consumer decision processes. Emphasis is on life style, situation, and information processing. Lecture and case analysis.

313 Advertising Management (3:3:0). Prerequisite MKTG 301. In-depth study and application of advertising and its role in marketing planning. Identification of relevant data to analyze the marketing situation, development of product position, marketing and advertising objectives, creative strategy, media planning, and evaluation.

330 (314) Purchasing Materials and Management (3:3:0). Prerequisite MKTG 301 or permission of instructor. Presents a broad view of the principles of industrial purchasing and management of inventories, including determination of requirements, prices, source selection, inventory policy, and professional ethics.

332 Retail Management (3:3:0). Prerequisite MKTG 301 or permission of instructor. Comprehensive view of retailing as it relates to the total marketing process. Emphasis on retail decision alternatives used when formulating retail strategy.

333 Industrial and Governmental Marketing (3:3:0). Prerequisite MKTG 301 or permission of instructor. In-depth description, analysis, and evaluation of industrial and governmental marketplaces. Emphasis on marketing procedures practiced and available to decision makers when considering pricing, promotion, and channels of distribution.

351 Marketing Research Techniques and Applications (3:3:0). Prerequisites DESC 202, MKTG 301. Study of concepts, theories, and principles underlying the marketing research process. Focus on development and evaluation of research design for gathering marketing information.

407 International Business (3:3:0). Prerequisites MKTG 301, MGMT 301, FNAN 301. Multidisciplinary approach to international trade from the viewpoint of business management. Introduced are unique aspects of international transactions, including patterns and theories of international business, impact of foreign trade and international environment, and international business planning.
include approximations, data analysis, model evaluation, optimization, difference and differential equations, deterministic and stochastic models.

213 Analytic Geometry and Calculus III (3:3:0). Prerequisite MATH 114. Infinite series, partial differentiation, multiple integrals, line and surface integrals.


290 Foundations of Mathematics (3:3:0). Prerequisites MATH 114 or 116. Axiomatic set theory; graphs; functions; equivalence relations and partitions; partially ordered sets; induction; concepts of the natural, rational, real and complex number systems, well-ordering principle; cardinality. Primarily intended for mathematics majors.


303 Matrix Algebra (3:3:0). Prerequisite MATH 114 or permission of instructor. Matrix operations, vector spaces, rank of a matrix, determinants, eigenvalues and eigenvectors.


305 Discrete Mathematical Structures (3:3:0). Prerequisite MATH 114 or 116. Survey of topics in discrete mathematical structures essential to the study of computer science. Topics include a discussion of number systems, lattices, Boolean algebra, graphs and directed graphs, combinatorics, and elementary introduction to graphs and finite fields and finite-state machines.


322 Linear Algebra (3:3:0). Prerequisites MATH 290 and (303 or 306). Vector spaces, linear independence, bases, linear transformations, matrix algebra, inner product, special topics.

325 Discrete Mathematics II (3:3:0). Prerequisite MATH 125 or 305. Further development of the ideas of discrete mathematics, including recurrence, generating functions, algorithms of graph theory, predicate calculus, finite state machines, modular arithmetic.

351 Probability (3:3:0). Prerequisite MATH 213 or 215. Random variables, probability functions, special distributions, limit theorems.

352 Statistics (3:3:0). Prerequisite MATH 351. Estimation, decision theory, testing hypothesis, correlation, linear models, and design.

371 Mathematics for the Elementary School (3:3:0). Concepts and theories underlying elementary school mathematics, including sets, logic, systems of numeration, whole numbers and integers, operations with integers, equations, and inequalities. Intended for elementary education majors only; does not count toward a major in mathematics.

372 Mathematics for the Elementary School II (3:3:0). Continuation of MATH 371; MATH 371 is recommended prior to enrolling in MATH 372. Topics include elementary number theory, rational and real numbers, intuitive geometry and measurement including the metric system. Intended for elementary education majors only; does not count toward a major in mathematics.


411 Functions of a Complex Variable (3:3:0). Prerequisite MATH 304 or 306. Analytic functions, contour integration, residues, and applications to such topics as integral transforms, generalized and boundary value problems.

413 Modern Applied Mathematics I (3:3:0). Prerequisites Either MATH 306 or (MATH 303 and MATH 304) and MATH 315. Synthesis of "pure mathematics" and "computational mathematics." The interplay between discrete and continuous mathematics is emphasized throughout. Mathematical structure is revealed from equilibrium models in discrete and continuous systems.

414 Modern Applied Mathematics II (3:3:0). Prerequisite MATH 413. Continuation of MATH 413 which involves a synthesis of "pure mathematics" and "computational mathematics." Fourier analysis and its role in applied mathematics is developed, e.g., differential equations and approximations. Discrete aspects are emphasized in computational models.


441 Operations Research I (3:3:0). Prerequisite MATH 303 or 306 or permission of instructor. Survey of deterministic methods for solving "real-world" decision problems. The 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, introduction to integer and nonlinear programming, dynamic programming and game theory. Emphasis on modeling and problem solving.


446 Numerical Analysis I (3:3:0). Prerequisites MATH 303 or 306 and knowledge of a scientific programming language. Significant figures, round-off errors, iterative methods of solution of nonlinear equations of a single variable, solutions of linear systems, iterative techniques in matrix algebra, interpolation and polynomial approximation.


491, 492 Reading and Problems (1-3:0:0), (1-3:0:0). For mathematical sciences majors only. Independent study in math. Must be arranged with instructor before registering.

493 Topics in Applicable Mathematics (3:3:0). Prerequisite 6 credits of math at or above the 310 level. Topics that have been successfully used in applications of mathematics. Subject determined by instructor.

494 Topics in Pure Mathematics (3:3:0). Prerequisite 6 hours of math at or above the 310 level. Topics of pure math not covered in other courses. Topics might include Galois theory, cardinal and ordinal arithmetic, measure theory, mathematical logic, and differential geometry. Subject determined by instructor.
Medical Technology Courses (MTCH)

Biology

200 Introduction to Medical Technology (1:1:0). Introduction to profession of medical technology.

401 Orientation to the Problems and Practices of the Clinical Laboratory (1-2:0:0). Prerequisite Completion of requirements for B.S. with a major in medical technology, except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. Orientation to clinical lab; specimen collection and record keeping; management principles and problems; educational theories as they apply to the teaching of clinical laboratory procedures; quality control principles. Not offered on campus.

402 Clinical Hematology and Coagulation (6-8:3:0). Prerequisite Completion of requirements for B.S. with a major in medical technology, except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. Morphology of blood cells in health and disease; theories of hematopoiesis and coagulation; techniques for measurement of hematologic parameters; hematologic pathologies and their lab evaluation. Not offered on campus.

403 Clinical Microscopy (1-3:0:0). Prerequisite Completion of requirements for B.S. with a major in medical technology except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. Clinical lab procedures that involve antigen-antibody reactions and the theoretical bases of such procedures. Includes both diagnostic and blood bank techniques. Not offered on campus.

404 Serology and Immunohematology (5-7:0:0). Prerequisite Completion of requirements for B.S. with a major in medical technology except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. Clinical lab procedures that involve antigen-antibody reactions and the theoretical bases of such procedures. Includes both diagnostic and blood bank techniques. Not offered on campus.

405 Clinical Microbiology (4-8:3:0). Prerequisite Completion of requirements for B.S. with a major in medical technology except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. The biology and pathology of bacteria, rickettsia, fungi, parasites, and viruses of clinical importance and their culture and identification. Not offered on campus.

406 Clinical Chemistry (6-10:0:3). Prerequisite Completion of requirements for B.S. with a major in medical technology except for the 30 hours of professional study and admission to a school of medical technology approved by the National Accrediting Agency for Clinical Laboratories. The chemical reactions and procedures used in clinical determinations on blood, urine, and cerebral spinal fluid. Includes manual and automated methods of chemical analyses. Not offered on campus.

Middle East Studies Courses (MEST)

Area Studies

300 Middle East Seminar I: Dimensions of the Middle East (3:3:0). Interdisciplinary introduction to important dimensions of the Middle East. Emphasis on contemporary trends, problems, and conflicts in the region. Underlying themes are the unity and diversity of the peoples and cultures, and change and continuity in the region's societies and nations.

400 Middle East Seminar II: Interpretation of Islamic History (3:3:0). Seminar designed to widen students' reading in issues and topics covered in other courses on the Middle East, to deepen their understanding of major problems in the Middle East and Islamic history, and to suggest ways in which these problems might be approached. The approach will be problem oriented, topical rather than chronological. It will focus on classic and key works of scholarship and on various interpretations of major issues in Islamic and Middle East history.

Music Courses (MUSI)

Performing Arts

100 Fundamentals of Music (3:3:0). Prerequisites Student must be able to read either treble or bass clef and should have some proficiency on a musical instrument or in voice. Study of musical notation, interval and triad construction, the reading of treble and bass clefs, scale construction, rhythm, elementary sight singing and ear training, and application at the keyboard. Cannot be applied toward a degree in music.

101 Music Appreciation (3:3:0). For nonmusic majors only. Introduction to music appreciation through formal and aesthetic principles. The elements of music are examined separately and as combined in various musical forms.

103 Folk and Traditional Music of the World (3:3:0). For nonmusic majors only. Study of musical structure and cultural setting of folk music among diverse peoples, with an introduction to traditional art music of India, China, and Japan.

104 Introduction to Twentieth-Century Music (3:3:0). For nonmusic majors only. Survey of various styles found in twentieth-century music. Tonal, atonal, serial, and experimental music.

105 Music in the United States (3:3:0). For nonmusic majors only. Study of music in the U.S. from colonial times to present. Through interaction with musical examples, the student traces significant African and European influences on emerging style and artistic activity in the U.S.

106 Latin American Music (3:3:0). For nonmusic majors only. Survey of folk, popular, and artistic music of Latin American countries in a historical setting. Influences of other cultures on the musical life of representative countries.

107 The Development of Jazz (3:3:0). For nonmusic majors only. Historical, analytical, and aural survey of jazz from inception to present day. Trends resulting from synthesis of jazz with other musical idioms.

113 Sight Singing and Ear Training I (2:3:0). Prerequisites Student must be able to read music and have some proficiency on a musical instrument or in voice. The student is taught to sing a line of music without the accompaniment of an instrument. Matching tones, major and minor scales, key signatures, intervals, rhythm. Treble, bass, alto, and tenor clefs. Rhythmic and melodic dictation.

114 Sight Singing and Ear Training II (2:3:0). Prerequisite MUSI 113 or permission of instructor. Continuation of Sight Singing and Ear Training I. Modulation, various modes. Melodic and harmonic dictation.

115 Harmony I (3:3:0). Prerequisites Student must be able to read music and have some proficiency on a musical instrument or in voice. Music notation, scales, key signatures, intervals, chords, cadences, figured bass.

116 Harmony II (3:3:0). Prerequisite MUSI 115 or permission of instructor. First- and second-inversion chords, modulation, nonharmonic tones, figured bass, seventh chords. Analysis of Bach chorales; composition of four-part chorales in eighteenth-century style.

151 Class Strings: Violin and Viola (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the violin and viola. Survey of instructional materials and bow and instrument selection.

152 Class Strings: Cello and String Bass (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the cello and string bass. Survey of instructional materials and bow and instrument selection.
163 Class Woodwinds: Flute and Clarinet (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the flute and clarinet. Survey of instructional materials and mouthpiece and instrument selection.

154 Class Woodwinds: Oboe and Bassoon (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the oboe and bassoon. Survey of instructional materials, instrument selection, andreed adjustment.

155 Class Brass (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the brass instruments. Survey of instructional materials and mouthpiece and instrument selection.

156 Class Percussion (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the percussion instruments. Survey of instructional materials and instrument selection.

157 Class Guitar (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of techniques of playing and teaching the guitar. Survey of instructional materials and instrument selection.

158 Class Voice I (1:0:2). Prerequisite Nonmusic majors must have permission of instructor. Study of the human voice in artistic singing. Practical application of basic principles is emphasized.

159 Class Voice II (1:0:2). Prerequisite MUSI 158 or permission of instructor. Continuation of voice study begun in MUSI 158. Emphasis on artistic singing in several styles.

171 Class Piano I (1:0:3). Prerequisite Nonmusic majors must have permission of instructor. Study of piano keyboard as it is related to various clefs in music. Emphasis on solution of basic stylistic and technical problems.

172 Class Piano II (1:0:3). Prerequisite MUSI 171 or permission of instructor. Study of piano keyboard as it is related to intermediate song and combined in various music forms.

173, etc. Private Music Instruction. See descriptions at end of music section.

181, 381 University Chorale (1:0:3). Prerequisite Audition. Performance of works from the choral repertoire. Public concerts are given. Four credits are to be earned at the 181 level before proceeding to the 381 level. May be taken eight times.

182 Collegiate Chorus (1:0:3). Prerequisite Audition. Ensemble training for students who wish to acquire skills required for participation in advanced performance ensembles. A local public presentation is given. May be taken twice for credit.

183, 383 Symphonic Winds (1:0:3). Prerequisite Audition. Performance of work from the band repertoire. Public concerts are given. Four credits are to be earned at the 183 level before proceeding to the 383 level. May be taken eight times.

184, 384 Symphonic Chorus (1:0:3). Prerequisite Audition. Performance of major works from the choral repertoire. Public concerts are given. Four credits are to be earned at the 184 level before proceeding to the 384 level. May be taken eight times.

187, 387 Symphony Orchestra (1:0:3). Prerequisite Audition. Performance of works from the symphony orchestra repertoire. Public concerts are given. Four credits are to be earned at the 187 level before proceeding to the 387 level. May be taken eight times.

189, 389 Jazz Ensemble (1:0:3). Prerequisite Audition. Ensemble providing practical experience in various aspects of jazz performance—section work within a large aggregation, combo work, and improvisation. Public concerts are given. Four credits are to be earned at the 189 level before proceeding to the 389 level. May be taken eight times.

215 Harmony III (3:3:0). Prerequisite MUSI 116 or permission of instructor. Study of four-part harmonic music and analysis of nineteenth-century compositions.

216 Harmony IV (2:2:0). Prerequisite MUSI 215 or permission of instructor. Continuation of study of harmonic music as it applies to classical forms.

218 Keyboard Harmony (1:0:2). Prerequisites MUSI 172 and 215. For music majors only. Study of techniques of harmonization at the piano keyboard.

231 Survey of World Music (3:3:0). Prerequisite MUSI 215 or permission of instructor. Survey of music literature in the four major theoretical systems of the world. Emphasis on influences of non-Western systems on Western music.

251 Music for the Elementary School (4:3:2). For nonmusic majors only. Survey of fundamentals of sound, rhythm, melody, harmony, and form, and their notation. Development of basic vocal, listening, and instrumental skills. Application of these understandings and skills to the development of the elementary school child's musicality by the nonspecialist classroom teacher.

271, 272 Techniques of Accompanying (1:0:3). Prerequisite 4 credits earned in Private Music Instruction (keyboard instrument) or permission of instructor. Fourteen 1-hour classes and 28 hours of supervised practicum per semester. The latter consists of practical application concepts and techniques learned during class sessions. This practical application normally consists of assignments to function as accompanist for two Private Music Instruction students (in lessons, practice sessions, and public performances) and/or equivalent amount of work as accompanist for GMU ensembles (in rehearsals and performances). MUSI 271 and 272 may each be taken three times.

285 Chamber Ensembles (1:0:3). Prerequisite Audition. Performance of works from the chamber music repertoire. Public performances are given. May be taken for credit six times.

315 Physical of Musical Sound (same as PHYS 215) (3:0:3). Prerequisite MUSI 216 or permission of instructor. The physics of music. Topics include simple harmonic motion, vibration, temperature, the ear, architectural acoustics, sound recording and reproduction.

319 Class Composition and Arranging I (3:3:0). Prerequisite MUSI 114, 216, or permission of instructor. Students are encouraged to exercise their creative powers through the writing of original compositions for specified instruments, voices, or combinations. They then apply compositional principles to the creative arrangement of existing music of various styles.

320 Class Composition II (3:3:0). Prerequisite MUSI 319 or permission of instructor. Compositional skills acquired in Class Composition and Arranging I are applied to larger forms of music and larger ensembles, with emphasis on twentieth-century techniques.

327 Choral Arranging (3:3:0). Prerequisite MUSI 216 or permission of instructor. Practical application of various techniques employed in composition and arrangement of choral music. Includes notation, text setting, choral voicing, choral texture, and contemporary vocal writing, as well as the composition of original materials as they apply to arranging techniques.

335 Historical, Theoretical and Analytical Study of Music I (3:3:0). Prerequisite MUSI 116 or permission of instructor. Study of music in Western Civilization from Greek antiquity through the Renaissance, with emphasis on historical, theoretical, and analytical aspects.

336 Historical, Theoretical and Analytical Study of Music II (3:3:0). Prerequisite MUSI 116 or permission of instructor. Study of music in Western civilization from Monteverdi through Haydn, Mozart, and their contemporaries, with emphasis on historical, theoretical, and analytical aspects.

351 Keyboard Pedagogy (3:3:0). Prerequisites MUSI 114, 216, 218, and 8 credits in piano or organ, or permission of instructor. Investigation of various methods, theories, techniques, and materials used in teaching of keyboard to children and adults, both in individual and group situations.

379 Improvisation (1:0:2). Prerequisites MUSI 114, 216, and 218, or permission of instructor. Application of the techniques of improvisation used in the various periods of music history on the student's major instruments and the piano.

380 Junior Recital (1:0:0). Corequisite MUSI 377 or 378. A public recital given by students during their junior year.

382 Piano Ensemble (1:0:3). Prerequisites Audition and 4 credits in Private Music Instruction — Piano. Study and performance of original four-hand works for one and two pianos. Public performances. May be taken four times.
385 Gioriana Singers (1:0:3). Prerequisite Audition. Discovery, interpretation, and performance of choral music for vocal chamber music ensembles from all historical periods. Emphasis is placed on achieving a high level of artistic performance and on bringing to the University and its surrounding community musical compositions which are not readily accessible in the regular concert repertoire. May be taken four times.

386 Laboratory Ensemble (1:0:3). Prerequisite One semester of class instrumental instruction on a band or orchestral instrument; for music majors only. Vocal and instrumental ensemble for music majors seeking state certification as music teachers; designed to provide opportunities for performance on secondary instruments and voice and to serve as a lab for conducting, methods and materials, and composition and arranging classes. May be taken twice.

388 Musical Theatre Techniques (1-3:2-6). Prerequisites Audition and permission of instructor. Preparation and presentation of works or parts of works from the musical theatre repertory (opera, oropera, musical comedy). Students will investigate applicable techniques in lab sessions and rehearsals. Public performance will be given. May be taken for credit four times.

390 Improvisation Ensemble (1:0:3). Prerequisite Audition. An ensemble experience designed to promote exploration of new sound sources inherent in each instrument voice, with emphasis on group interaction and sensitivity to musical texture, timbre, and tonal resources through aural awareness. Public concerts are given. May be repeated a total of four credits.

391 General Conducting (2:0:3). Prerequisites MUSI 114, 172, 216, and 218, or permission of instructor. Study of basic techniques of conducting a musical ensemble.

396 Advanced Conducting (2:0:3). Prerequisite MUSI 391 or permission of instructor. Advanced conducting course emphasizing the techniques of bringing a musical ensemble to concert standard. Consideration of the interpretation of repertoire from the applicable historical periods.

417 Techniques of Twentieth-Century Style Analysis (3:3:0). Prerequisites MUSI 216, 218, and 319, or permission of instructor. Various analytical methods for understanding the complex nature of twentieth-century music and the diverse styles of today's composers. Selected masterworks from contemporary music literature.

419 Orchestration (3:3:0). Prerequisites MUSI 216, 218, and 319, or permission of instructor. Principles of combining and balancing instruments in orchestral and chamber contexts. Attention to orchestral terminology and general notation as well as key relations, clefs, transposition, special effects, and scoring procedures.

435 Historical, Theoretical, and Analytical Study of Music III (3:3:0). Prerequisite MUSI 216 or permission of instructor. Study of development of Western music from Beethoven through the post-Romantic era, with emphasis on historical, theoretical, and analytical aspects.

436 Historical, Theoretical, and Analytical Study of Music IV (3:3:0). Prerequisite MUSI 216 or permission of instructor. Development of Western music from late nineteenth-century impressionism to the present, with emphasis on historical, theoretical, and analytical aspects.

437 Choral Literature (3:3:0). Prerequisite MUSI 216 or permission of instructor. Survey of sacred and secular choral literature from the Middle Ages to the present. Representative genres such as Mass, motet, madrigal, anthem, cantata, passion, oratorio, and part-song.

438 Operatic Literature (3:3:0). Prerequisite MUSI 216 or permission of instructor. Opera from seventeenth century to present, with emphasis on historical stylistic development. Important works in the operatic repertory.

439 Keyboard Literature (3:3:0). Prerequisite MUSI 216 or permission of instructor. Chronological survey of keyboard literature and its antecedents from the sixteenth century to present. Solo keyboard genres such as choral prelude, suite, sonata, theme and variations, and character piece in a historical context.

440 Orchestral Literature (3:3:0). Prerequisite MUSI 216 or permission of instructor. Chronological survey of development of orchestra and its literature from seventeenth century to present.
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). Prerequisite Baccalaureate in music or permission of instructor. 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). Prerequisite Baccalaureate in music or permission of instructor. Historical and analytical study of the concepts which produced the concerto form and its extensive literature, from the seventeenth through twentieth centuries.

561 Advanced Topics in Music Education (1-3:1-3:0).
Prerequisite Degree in music education or permission of instructor.
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 required.

562 The Psychology of Music Teaching and Learning (3:3:0).
Prerequisite Baccalaureate in music or permission of instructor.
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). Prerequisite 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). Prerequisite 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). Prerequisites Audition and baccalaureate in music or permission of instructor. Performance of works from the chamber music repertoire. Public performances are given. May be taken four times for credit.

587 Symphony Orchestra (1:0:3). Prerequisite Audition. Performance of works from the symphony orchestra repertoire. Public concerts are given. May be taken for credit four times.

597 Advanced Topics in Conducting (3:3:0). Prerequisite baccalaureate in music with a minimum of two semesters of study in conducting or permission of instructor. Intensive study of an advanced topic in conducting chosen according to interests of students and instructor from such topics as the following:

1. Choral Conducting: 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 credits may be earned.

Private Music Instruction

Beginning Private Music Instruction
To earn one credit per semester, a student takes one half-hour private music lessons and is expected to practice 50 minutes each day. Only one credit can be earned each semester. Instruction is offered in piano, classic guitar, voice, and the standard band and orchestral instruments. Cannot be applied toward a degree in music. The private music instruction fee applies.

177, 178, 277, 278 Beginning Private Music Instruction — Instrumental/Vocal (1:0:5 for each).

Undergraduate Private Music Instruction
To earn one credit per semester, a student takes one half-hour private music lessons; to earn two or three credits per semester, a student takes one or two private lessons. In Private Music Instruction — Accompanying, a student takes the equivalent of 14 half-hour private music lessons for one credit per semester or 14 one-hour lessons for two or three credits per semester, a number of which may be spent in a group-practicum situation at the instructor's discretion.

The following amount of practice (or composing) is expected each day:
- one credit: 50 minutes; two credits: 1 hour and 40 minutes; three credits: 2 and one-half hours.

As part of the repertoire requirement, each student must attend at least 10 music programs sponsored by the Department of Performing Arts. Undergraduate Private Music Instruction is offered in piano, organ, harp, classic guitar, voice, koto, the standard band and orchestral instruments, composition, conducting, and accompanying. The private music instruction fee applies.

173, 174, 273, 274, 373, 374, 473, 474 Undergraduate Private Music Instruction — Instrumental/Vocal (1:0:5 for each).

179, 180, 279, 280, 479 Undergraduate Private Music Instruction — Instrumental/Vocal (1:0:5 for each).

175, 176, 275, 276, 375, 376, 475, 476 Undergraduate Private Music Instruction — Instrumental/Vocal (2:0:1 for each).

377, 378, 477, 478 Undergraduate Private Music Instruction — Instrumental/Vocal (3:0:1 for each).
Prerequisites For MUSI 173, 175, and 179; Audition; for MUSI 377, 8 credits on the major instrument and approval by an audition committee. Corequisite for MUSI 377 or 378: MUSI 380. Corequisite for MUSI 477 or 478: MUSI 480.

221, 222, 321, 322, 421, 422 Undergraduate Private Music Instruction — Composition (1:0:5 for each).

223, 224, 323, 324, 423, 424 Undergraduate Private Music Instruction — Composition (2:0:1 for each).
Prerequisites for MUSI 221: MUSI 114 and 319; prerequisites for MUSI 223: MUSI 114 and 319, portfolio of compositions, and an interview with a faculty committee.

491, 492 Undergraduate Private Music Instruction — Conducting (1:0:5 for each).

493, 494 Undergraduate Private Music Instruction — Conducting (2:0:1 for each).
Prerequisites for MUSI 491 and 493: MUSI 396 and an audition before a faculty committee.

125, 126, 225, 226 Undergraduate Private Music Instruction — Accompanying (1:0:5 for each).

127, 128, 227, 228 Undergraduate Private Music Instruction — Accompanying (2:0:1 for each).

329, 330, 429, 430 Undergraduate Private Music Instruction — Accompanying (3:0:1 for each).
Prerequisite for MUSI 125 and 127: Undergraduate Private Music Instruction — Instrumental/Vocal Audition or MUSI 172; for MUSI 329, 8 credits on a keyboard instrument and approval by an audition committee. Corequisite for MUSI 329 or 330: MUSI 380. Corequisite for MUSI 429 or 430: MUSI 480.

Nursing Courses (NURS)

Nursing

250 Concepts of Health Throughout the Life Span (3:3:0). Prerequisites 3 hours of psychology and sociology. Consideration of health maintenance and health promotion behaviors throughout the life cycle. Examination of normal growth, development, nutrition.

254 Introduction to Professional Nursing (3:3:0). Prerequisite or corequisite NURS 250 or permission of school. Introduction to nursing as an emerging discipline, profession, and occupation. Emphasis on development of a dynamic concept of nursing, essential behaviors of the profession, and the design of nursing systems.

262 Technologies in Nursing (4:0:6). Prerequisites Anatomy and physiology. Prerequisite or corequisite NURS 254. Skills required in the assessment, design, and control of nursing systems. Clinical practice arranged.

301, 302 Elements of Pathology and Medical Therapeutics (4:4:0). Prerequisites Anatomy and physiology, chemistry, microbiology, psychology (3 hours), sociology, NURS 250, 254, 262; or permission of school. Content foundational to nursing; pathology in psychological, sociological, and physiological system;
medical technologies; selected modes of medical diagnosis and treatment.

314 Nursing Systems for Adults and Children (3:3:0).
Prerequisites NURS 250, 254, 262; prerequisite or corequisite NURS 301. Design and implementation of nursing systems for adults and children. The self-care conceptual framework and the nursing process are used to identify (1) the agency of clients to manage their health care, and (2) the appropriate methods of nursing assistance. Selected health-related concepts are presented.

315 Application of Nursing Systems for Adults and Children (5:0:15).
Prerequisite or corequisite NURS 314. Application of nursing systems for adults and children in the acute care setting. Clinical experiences focus on using the nursing process to provide care to clients and families with health and self-care needs resulting from medical, surgical, and congenital problems.

Prerequisite Degree in another field or R.N. Corequisite NURS 254. Focus on small groups and families as participants in health care. The influence of professional issues on the nurse's developing role will be explored.

Prerequisite Degree in another field. Corequisite NURS 254. Focus on small groups and families as participants in health care. The influence of professional issues on the nurse's developing role will be explored. Life-span growth and development will be discussed, focusing specifically on theories, self-care and health maintenance practices, implications of specific hazards as well as foundations of basic and age-related nutritional requirements.

319 Nursing Systems for Individuals and Small Groups (4:4:0).
Prerequisites NURS 254, 262, 318. Corequisites NURS 320, 421, 430, 540. Course contains content that is fundamental for designing nursing systems. Course focuses on concepts related to pathology in the psychological, sociological, and physiological systems. Content focuses on designing nursing systems for the pediatric, maternity and psychiatric client and/or family.

320 Applications of Nursing Systems for Individuals and Small Groups (6:0:18).
Corequisite NURS 319. R.N., This clinical course concerns the application of nursing systems for individuals and small groups in the psychiatric, maternity and pediatric setting. Clinical experiences focus on using the nursing process to provide care for clients with health and self-care needs resulting from developmental, maternity, mental health and pediatric problems. Attention is also given to health care coordination within the nursing subsystem.

324 Nursing Systems for Individuals, Small Groups, and Families (3:3:0).
Prerequisites NURS 250, 254, 262; prerequisite or corequisite NURS 302. Design and implementation of nursing systems for individuals, small groups, and families. The nursing process will be used to identify the current and potential agency of clients to manage their health and self-care and the appropriate methods of nursing assistance for clients with developmental, maternity, and/or mental health self-care deficits.

325 Application of Nursing Systems for Individuals, Small Groups, and Families (5:0:15). Prerequisite or corequisite NURS 324. Application of nursing systems for individuals, small groups, and families in the acute care setting. Clinical experiences focus on using the nursing process to provide care for clients with health and self-care needs resulting from developmental, maternity, and mental health problems. Attention is also given to health care coordination with the nursing subsystem.

411 Research Dimensions in Nursing (3:3:0).
Prerequisites NURS 301, 302, 314, 315, 324, 325. Introductory research course presenting basic research concepts and methods used in nursing studies. Major nursing theories as a foundation for scholarship.

419 Theoretical Concepts of Nursing Systems for Individuals and Large Groups (3:3:0).
Prerequisites NURS 319, 320, 426, 430, 450; corequisites NURS 420, 411, 475. Course focuses on nursing concepts of complex care and includes concepts related to pathophysiology in individuals and groups. Emphasis is on nursing systems for adult and aged populations in acute and chronic settings.

420 Implementing Complex Nursing Systems for Individuals and Large Groups (8:2:8).
Prerequisite or corequisite NURS 426, 430. Course includes health promotion, disease prevention, and complex care nursing in either acute or chronic settings. Application of nursing care concepts, demonstration of relevant clinical skills and participation in nursing care planning and patient family teaching are essential components. Clinical experience focuses on focusing the role of the nurse as a subsystem within the larger health care system and is based upon student's interest and goals in the provision of complex nursing care.

426 Nursing Management and Leadership (3:3:0).
Prerequisites NURS 301, 302, 314, 315, 324, 325. Foundational principles related to managing nursing systems. Emphasis on application of management process to nursing organizations.

430 Nursing Systems for Individuals, Families, and Large Groups in Community Settings (3:3:0). Focus on identification of concepts used in designing nursing systems for individuals, families, and large groups in community settings. Emphasis on small and large group concepts; principles of epidemiology; principles of primary, secondary, and tertiary prevention; teaching and learning strategies used with large groups; and description of populations at risk who are community-residing.

431 Application of Nursing Systems for Individuals, Families, and Large Groups in Community Settings (5:0:15).
Prerequisites NURS 301, 302, 314, 315, 324, 325; corequisites NURS 426, NURS 430. Delivery of nursing care to large groups to facilitate increased self-care. Nursing systems are developed to serve large groups in community settings.

450 Health Assessment (3:2:2).
Prerequisites NURS 301, 302, 314, 315, 324, 325. Acquisition of skills necessary to collect data for health history and to carry out physical and psychosocial assessment of the individual. Lab experiences develop and validate health appraisal skills.

471 Professional Issues in Nursing Practice (3:3:0). The influence of professional issues on the nurse's role in clinical practice will be explored in small group discussions.

475 Nursing Systems for Individuals and Groups with Complex Problems throughout the Life Span (3:3:0). Examination of nursing implications of selected major health problems which significantly affect individuals or groups throughout the life span. This course applies the nursing process according to the self-care deficit theory. Incorporated within this are epidemiological statistics, health assessment, pathophysiology, stages of the nursing process, pharmacology, and application of appropriate nursing research findings. Course will be taught by the team approach to use expertise from within and outside the faculty.

476 Application of Nursing Systems for Individuals and Groups with Complex Problems (5:0:15).
Prerequisites NURS 301, 302, 314, 315, 324, 325; prerequisite or corequisite NURS 426. Application in an acute care setting of knowledge of nursing systems for individuals and small groups. Clinical experiences focus on understanding nursing as a subsystem within the larger health care system and are based upon student's interest and goals in the provision of complex nursing care.

480 Health Maintenance and Health Aspects of Aging (3:3:0). Study of physiological and psychological factors which influence health and have implications for preventive measures in disease and health disorders in the aging. Nutrition, the nature of health problems, and methods of assessing physical and psychological needs are examined.

495 Directed Reading in Nursing (2:0:6).
Prerequisite 84 hours and permission of school. Examination of literature on specialized topic in nursing practice, education, or scholarship. Conducted in consultation with faculty.

499 Independent Study in Nursing (1-3:0:0).
Prerequisite permission of school. Individual study of a particular problem area in nursing research, theory development, or education under the direction of faculty. Clinical practice may be arranged.

550 Pathophysiological 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 man as a whole, open system. Complex health programs from the...
perspective of maintaining homeodynamics.

570 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.

Operations Research Courses (OR)

Operations Research and Applied Statistics

435 Computer Simulation Modeling (3:3:0). Prerequisite STAT 344 or equivalent. Introduction to the basic concepts of simulating complex systems by computer. Topics covered include Monte-Carlo methods, discrete-event modeling, a specialized simulation language, and the statistics of input and output analysis.

441/MATH 441 Operations Research I (3:3:0). Prerequisite MATH 303 or permission of instructor. Survey of 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; introduction to integer, nonlinear, and dynamic programming. Emphasis on modeling and problem solving.


451/DESC 451 Optimization Models (3:3:0). Prerequisite DESC 352. An examination of optimization models as applied to business problems. Both linear and nonlinear models are considered, including dynamic, integer, and goal programming. Applications to management, finance, and marketing.

540 Management Science (3:3:0). Prerequisite MATH 108 and 110, or equivalent. Operations research techniques and their application to managerial decision making. Mathematical programming, Markov processes, queueing theory, inventory models, PERT, CPM, and computer simulation. Use of contemporary computer software for problem solving. OR/MS majors will not receive credit.

541 Operations Research I (3:3:0). Prerequisite MATH 303 or equivalent. 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; introduction to integer, nonlinear, and dynamic programming. Emphasis on modeling and problem solving. Students who have taken OR/MATH 441 will not receive credit.

542 Operations Research II (3:3:0). Prerequisite STAT 344, MATH 351, or equivalent. Probabilistic methods for solving decision problems under uncertainty. Probability review, project networks including PERT and CPM, queueing theory, inventory theory, Markov decision processes, reliability, decision theory and games, simulation. Emphasis on modeling and problem solving. Students who have taken MATH 442 will not receive credit.

Plan for Alternative General Education Courses (PAGE)

PAGE

Only students enrolled in the PAGE program are eligible to take PAGE courses. Because of the highly integrative nature of the PAGE program, the courses in one semester are generally prerequisite for the courses in the following semester. (Exceptions for majors in certain departments have been previously arranged and are available in the PAGE office.)

120 Computers in Contemporary Society (4:4:0). Provides computer literacy through hands-on programming and information processing, as well as appreciation of the computer's role in modern society.

122 Reading the Arts (3:3:0). Explores the relationship of the arts to the whole in a work of art, the connections among different art forms, and the links between art and the outside world. Specific content and forms considered vary from section to section.

123 Reading Cultural Signs (3:3:0). Uses techniques developed in PAGE 122 and new methods introduced from sociology, economics, history, anthropology, and psychology to explore ways in which various media (art, architecture, movies, literature, and music) reflect and shape personal and social values.

125, 225 Analysis and Solution of Quantitative Problems I, II (3:3:0), (3:3:0). Discusses real-world modeling and problem solving techniques and, in conjunction with the computer and tools introduced from the mathematical sciences, applies these to the analysis and solution of a variety of quantitative problems in the natural and social sciences as well as the business environment.

130 Conceptions of Self (3:3:0). Drawing from appropriate works in the social sciences, arts and humanities, examines different conceptions of the self, characteristics of different cultures and historical eras.

131 Contemporary Society in Multiple Perspectives (3:3:0). Explores methods and perspectives in the social sciences and humanities to evaluate the contribution of different disciplines to an understanding of significant social issues and their global ramifications.

150, 152, 250 Symbols, Codes and Information (1:1:0), (1:1:0), (1:1:0). Prerequisite Taken in sequence. Provides a synthesis of the PAGE courses emphasizing the various ways in which people communicate ideas to one another — through language, mathematics, the graphic and musical arts. Lectures by PAGE faculty and guest speakers.

151, 153, 251 Values, Themes, and Cultural Problems (1:1:0), (1:1:0), (1:1:0). Prerequisite Taken in sequence. Integrates the material treated in the PAGE courses dealing with the interrelationship of the self and society as seen through the various social sciences, humanities, and arts. Lectures by PAGE faculty and guest speakers.

227, 228 Scientific Thought & Processes I, II (4:3:3), (4:3:3). Prerequisite Taken in sequence. Explores and integrates the principles of classical and modern science through the study of such topics as cosmology, evolution, ecology, mechanics, relativity, and quantum physics.

230 Cross-Cultural Perspectives (3:3:0). Enables students to broaden cultural horizons and to understand human behavior by studying in depth a society different from their own.

252 The Decision Making Process and the Choice of Technologies (3:3:0). Explores decision making in large organizations, its effects on the choice of technologies, and the impact of these choices on values.

253 The Contemporary United States (3:3:0). Studies specific aspects contemporary U.S. society from historical, sociological, political, economic, cultural, and global perspectives.

Parks, Recreation, and Leisure Studies Courses (PRLS)

Health, Sport, and Leisure Studies

100 Introduction to Parks, Recreation, and Leisure Studies (3:3:0). Historical, philosophical and technical development of leisure service professions and organizations.

103 Careers in Leisure (1:1:0). In cooperation with the Career Counseling program, students analyze personal and professional interests, attributes, and skills regarding the training needs for various job opportunities in leisure services.

115 Recreation — Fishing and Camping (2:0:3). Fishing techniques with various rods; basic camping techniques. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 115.

117 Rock Climbing (1:0:2). Basic climbing skills, safety, and use
of equipment. Graded S-NC only. Fee. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 117.

119 Recreation — Trap and Skeet Shooting (2:0:3). Fundamentals and safety in shooting clay targets and reloading. Fee. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 119.

120 Recreation — Backpacking, Orienteering, and Cookery (2:0:3). Basic skills and knowledge for lifetime activities in the outdoors. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 120.

180 Whitewater Canoeing (1:0:2). Prerequisite Ability to swim fully clothed for five minutes and to put on the PFD in water. Basic skills must be mastered on flat water prior to the two whitewater canoe trips. Fee. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 180.

190 Downhill/Cross-Country Skiing (2:0:3). Basic skills, safety, and equipment for downhill and cross-country skiing. Graded S-NC only. Fee. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 190.

210 Leisure in Society (3:3:0). Cultural, social, and economic aspects of leisure. Explores the effects of leisure on individuals, the family, and the community.

255 Basic Scuba Diving (2:0:3). Prerequisite Intermediate-level swimming ability. Basic skill and knowledge to prepare for the Open Water Diver Certificate (PADI). Fee. This course may not be taken by anyone who has previously taken and satisfactorily completed PHED 255.

310 Marketing and Programming of Leisure Studies (3:3:0). Development of special skills and theories in needs assessment, social, cultural, physical, and educational values and the role of the professional in programming.

315 Public Relations and Communications in Parks and Recreation Resources (3:2:2). Use of media publicity, public relations, and marketing of leisure services.

316 Recreation and Outdoor Education (3:3:0). Techniques of recreational leadership, community resources, supervision and evaluation methods for converting leisure into outdoor recreation and education. Fee.

320 Leadership Principles and Techniques in Leisure Services (3:3:0). Analysis of leadership principles and individual leadership styles in working with leisure service volunteers, advisory boards, community organizations, personnel, and leisure participants.

326 Seminar: Problem Solving in Recreation and Parks (3:3:0). Students involved in organizations and leisure facility operations. Problem-solving methods will be reviewed and applied in the work environment. Professional standards, legal and fiscal policy will be compared across several agencies.

400 Field Study of Metropolitan Park and Recreation Resources (3:3:0). A field course that reviews and compares a wide variety of park and recreation facilities; museums; national parks; community centers; sports facilities; theme parks; reservoirs; campgrounds; visitor centers; national, state, and local lands and facilities; commercial and private developments; large-scale redevelopment and restoration projects.

405 Planning, Design, and Maintenance of Leisure Facilities (3:2:2). A direct application course that reviews the principles of planning, design, and maintenance in terms of demand, function, efficiency, safety, and economy principles and techniques for master planning, goal and objectives identification, and design standards. A variety of leisure facilities will be analyzed, including parks, recreation centers, playgrounds, campgrounds, commercial facilities, and multiuse conversions.

410 Management and Operation of Leisure Resources (3:3:0). A comprehensive course addressing the day-to-day problems in the operation and management of leisure resources. Discussions include role definitions, management techniques, problem solving, decision making, affirmative action mandates, emergency and legal problems, as well as legislation and implications for land management.

415 Leisure for Special Populations (3:3:0). Methods and techniques of leisure service adapted to meet the unique needs of special populations (physical, social, emotional, or mental). Emphasis will be placed on the role of leisure in assisting the special population person to realize his individual potential. Specific topic areas include client assessment, activity analysis, use of consultant services, cooperation with primary therapist, client evaluation, and reporting.

425 Leisure Funding and Finance (3:3:0). An examination of methods and techniques of funding generation, appropriation, justification, and management. Specific areas include budget preparation and presentation, grantships (sources, cycles, and techniques), revenue projection and analysis, contract services, budgeting modalities, and accountability.

450 Senior Research Practicum in Park and Recreation Area Management (4:4:0). A senior project featuring in-depth analysis of selected problem areas in parks and recreation such as master plans, maintenance management operations, revenue resource analysis, grant and proposal development, planning-programming-budgeting systems, legislative and financial policy, research projects, and other topics in the planning design and management of specific facilities and areas. A senior thesis or project-oriented report is required.

460 Legal Dimensions of Leisure (3:3:0). An examination of the relationship between leisure and the law. Specific topics include liability, safety codes, law enforcement, dealing with deviant behavior, insurance, bonding, contracts, identification of legal decision-making organizations and how they are influenced as well as the legal dimensions of land acquisition, personnel disputes, and current issues.

490 (325) Internship (12:0:0). A paid or voluntary experience in a park and recreation agency. Application of academic research and course work into the work environment. Supervisory roles explored, management structure and operation analyzed.

499 Independent Study (1-3:0:0). Individual study of topic area in leisure research, theory, or practice under the direction of faculty.

**Philosophy Courses (PHIL)**

**Philosophy and Religious Studies**

100 Introduction to Philosophy (3:3:0). Introduction to nature of philosophical reasoning and to some of the main problems of philosophy.


111 Introduction to Social and Political Philosophy (3:3:0). Examination of philosophical foundations of some of the major concepts and institutions in social and political thought.

151 Introduction to Ethics (3:3:0). Consideration of some of the perennial issues in ethical theory.

173 Introduction to Logic (3:3:0). Basic concepts and techniques of deduction, emphasizing the modern treatment of such topics as quantification and rules of inference, with study of the classical treatment. Basic principles of induction, informal fallacies, and uses of logic in everyday life.

212 Alternative Futures for Science and Society (3:3:0). Inquiry into how values of freedom and rationality are involved in the ways in which science and technology are being used to meet problems of our day.

253 Philosophy and Literature (3:3:0). This course can count for literature credit as well as philosophy credit. The philosophic significance of psychiatry, existentialism, and Marxism and their expression in twentieth-century literature in the stories of Mann, Kafka, Hesse, Camus, Sartre, Koestler, Bellow, and Pynchon. Themes include paradox, alienation, absurdism, narcissism, totalitarianism vs. democracy, art and neurosis, sexuality, symbolism, freedom, and authenticity.

254 Contemporary Ethical Problems (3:3:0). Topics include homosexuality, abortion, drugs, civil disobedience, capital punishment, the rights of the individual vs. the rights of society.

http://catalog.gmu.edu
301 History of Western Philosophy: Ancient (3:3:0). Selected figures and problems in philosophy from the pre-Socratics to the Stoics and Epicureans. May not be taken by students who have previously taken PHIL 231.

302 History of Western Philosophy: Medieval (3:3:0). Figures and problems of medieval philosophy: in-depth study of leading thinkers from the fifth to the fifteenth centuries. May not be taken by students who have previously taken PHIL 234.

303 History of Western Philosophy: Modern (3:3:0). Figures and problems of modern philosophy: in-depth study of such philosophers as Descartes, Locke, Berkeley, Hume, Kant, and Hegel. May not be taken by students who have previously taken PHIL 232.

305 Business Ethics (3:3:0). An examination of some of the moral problems that arise with regard to the responsibilities of various segments of the business community — employers, management, stockholders — to one another, to the consumer, and to society at large.

306 Criminal Justice Ethics (3:3:0). Prerequisite 54 hours or permission of instructor. This course will be an in-depth analysis of the ethical principles relevant for those working in criminal justice.

309 Medicine and Human Values (3:3:0). Examination of some of the major moral issues involved in the practice of medicine and arising from research in the life sciences. Topics include medical experimentation, eugenics, definition of death, euthanasia, abortion, distribution of scarce resources, transplants, organ donation, and psychiatric medicine. May not be taken by students who have previously taken PHIL 310.

311 Philosophy of Law (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Investigation of theories of natural law, legal positivism, and legal realism as they pertain to some of the central philosophical questions about law. What is the nature of law? What is a legal system? What is a valid law? What is a good reason for a judicial decision?

313 Philosophy of Religion (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Study of classical appeals to philosophy in support of belief in God's existence (Philo, Aquinas, Anselm, Augustine, Descartes); the fideism of Hume and the metaphysical agnosticism of Kant; the concept of religious experience in the philosophies of Hegel, Schleiermacher, and Kierkegaard; the problem of religious language contemporary empirical philosophy.

315 Philosophy of History (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Investigation of development of historical consciousness of humanity. Intended to distinguish the historical from the unhistorical attitudes of human consciousness and to investigate the various forms of historical consciousness by studying different interpretations of history.

325 Karl Marx's Social and Political Thought (3:3:0). Prerequisite 3 credits in PHIL or permission of instructor. Study and evaluation of Marx's social and political ideas based on writings selected from several phases of his career. Examination of relation of Marx's thought to post-Marxian socialist theory and practice.

326 Contemporary Theories of Justice (3:3:0) Prerequisite 9 hours of philosophy or permission of instructor. Examination of alternative theories of justice, focusing on recent work by a major libertarian philosopher and recent work by a major egalitarian philosopher. The central questions of the course are: What constitutes a just distribution of property? How is the right to individual freedom to be weighed against the right to receive basic human necessities?

331 Philosophy in the United States (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Selected studies of American philosophers of the nineteenth and early twentieth centuries, such as Emerson, Thoreau, Pierce, James, Royce, Santayana, Dewey, and Whitehead. Emphasis on their relation to American culture.

332 Twentieth-Century Analytic Philosophy (3:3:0). Prerequisite 3 hours of logic and PHIL 303 or permission of instructor. Examination of the attempts of twentieth-century philosophers to solve philosophical problems by an analysis of language. Figures and movements covered include Russell, Moore, Wittgenstein, logical positivism, and ordinary language philosophy.

PHIL 333 Feminism and Philosophy: Issues (3:3:0) Prerequisite 3 hours in philosophy. Examination of philosophical issues raised by the women's movement. Among the topics included are abortion, pornography, affirmative action, comparable worth, women's moral development, women's spirituality.

334 Latin American Thought (3:3:0). Historical sources and present range of Latin American thought. Metaphysical, ethical, and aesthetic premises from colonial-period cosmology to modern personal and national philosophies. Distinguished philosophers of recent times such as Korn and Romero (Argentina), Faras Brito (Brazil), Varonita (Cuba), Caso and Vasconcelos (Mexico), Deusta (Peru), and Vaz Ferreira (Uruguay). Contemporary thought touching religious, social, and political topics.

PHIL 335 Nineteenth Century Philosophy (3:3:0) Prerequisite 3 hours in philosophy or permission of instructor. Development of German Romanticism and Idealism during a brilliant period in the history of the West rivaled only by ancient Greece. Kant, Fichte, Hegel, Kierkegaard, Schopenhauer, Nietzsche mount a revolt against the rationalism and science of the modern world. They open up a new philosophical horizon with the concept of the creative powers of the self, the intertwining of self and society, the subordination of truth to the will of the artist or the group, and madness as the terror of modernity. Each of these psychologists philosophers offers a therapy for life in the modern word and influences the growth of twentieth century psychotherapy and psychology.

336, 337 Contemporary Continental Thought: Phenomenology and Existentialism (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Study of phenomenological and existential thought, demonstrating that the movement is both a criticism and a continuation of the philosophical outlook developed in modern philosophy beginning with Descartes. PHIL 336 focuses on the existentialists' concern with the meaning of being human by exploring the themes of subjectivity, absurdity and the meaning-giving functions of consciousness. PHIL 337 stresses the emergence of new theories of reality as consequences of changing attitudes toward consciousness. The courses need not be taken in sequence.

335 Contemporary Ethical Theory (3:3:0). Prerequisite PHIL 151 or permission of instructor. Major trends and issues in recent moral philosophy.

356 Philosophy of Art (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Basic problems which arise from an inquiry into the meaning and value of art and our response to art.

357 SOCI 599 Philosophy of the Social Sciences (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Philosophical issues relating to competing methodologies for the social sciences. Analysis and critique of mainstream positivism and structuralist sociologies; the meaning and value of art and our response to art.

371 Philosophy of Natural Sciences (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. One semester of logic recommended. Study of aims and methodology of science. Among the questions of concern are: What constitutes a good scientific explanation? What grounds are used for comparing rival theories? Is there a special method of scientific discovery?

372 Philosophical Methods (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Study of the relationship between a philosopher's method, doctrine, and concept of truth. Philosophers studied vary, but include representatives from among the Empirical, Analytical, Phenomenological, Hermeneutical, and Structuralist movements.

373 Theory of Knowledge (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Discussion of basic problems concerning the nature of knowledge, with study of the relation of knowledge to perception, belief, and language.

374 Philosophy of Mind (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Investigation of such theories as dualism, behaviorism, and materialism as they pertain
to some of the central philosophical questions about mind: What is mind? What is the relation of mind to body? What is the justification of our belief in minds other than our own?

375 Metaphysics (3:3:0). Prerequisite 3 hours of philosophy or permission of instructor. Study of basic problems concerning being in general and foundations of individual being; traditional treatments of such problems and criticism of the possibility of such knowledge. Selected readings from figures such as Plato, Aristotle, Aquinas, Spinoza, Leibniz, Kant, Bradley, Heidegger, and others.

376 (formerly 273) Introduction to Symbolic Logic (3:3:0). Prerequisite PHIL 173 or MATH 110 or permission of instructor. Study of predicate calculus by means of a step-by-step construction of artificial languages. Topics include procedures for constructing a calculus, proof techniques, significant properties of predicate calculus, and procedures for recognizing phrases.

391, 392 Special Topics in Philosophy (3:3:0), (3:3:0). Examination of topics of current interest, such as death and dying, rights, social justice of health care, and evolving health care technologies.

Foundations of European Civilization (3:3:0). (See EUST 300 under European Studies.) Up to 3 credits of listed European Studies seminars may be credited toward the major.

Classicism and Romanticism (3:3:0). (Same as EUST 350.) Up to 3 credits of listed European Studies seminars may be credited toward the major.

421, 422, 423, 424 Seminar (3:3:0) for each. Limited to philosophy majors with 9 hours of philosophy, but others may be admitted if the topic is sufficiently close to their fields of study. Topics vary.

425, 426 Independent Study (3:0:0), (3:0:0). Prerequisite Philosophy majors with 54 hours and 15 hours of philosophy and permission of department. The Twentieth Century in Europe (3:2:0). (Same as EUST 450.) Up to 3 credits of listed European Studies seminars may be credited toward the major.

510 Seminar in the Ethics of Health Care (3). Prerequisite 54 hours, 84 hours graduate standing, or permission of instructor. An examination of moral dilemmas within the health care profession 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). Prerequisite 84 hours, 6 hours of 300-level English and 6 hours of 300-level philosophy, or permission of instructor. 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). Prerequisite 6 hours of philosophy or a course in personality theory or permission of instructor. Exploration of philosophical aspects of Freud's thought, focusing on Freud's philosophy of human nature and culture and its influence on contemporary thought.

550 Contemporary Theories of Justice (3:3:0). Prerequisite 9 hours in philosophy or permission of instructor. Examination of alternative theories of justice, focusing on recent work by a major libertarian philosopher and recent work by a major egalitarian philosopher. The central questions of the course will be: What constitutes a just distribution of property? How is the right to individual freedom to be weighed against the right to receive basic human necessities?

555 Environmental Ethics (3). Prerequisite 54 hours, 84 hours or graduate standing, and 3 credits in philosophy plus a combined total of 9 additional credits in philosophy and sciences, or permission of instructor. 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). Prerequisite A combined total of at least 12 credits 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 permission of instructor. A careful examination of some issue or issues of current interest to both philosophers and psychologists. Typical issues examined include the mind-body problem, philosophical and psychological implications of work in artificial intelligence, philosophical issues in psycholinguistics.

591 Special Topics in Philosophy (3:3:0). An examination of specific topics in philosophy that are both of central interest in that field and of interdisciplinary interest. Topics will be selected with special reference to the areas of technology, aesthetics, philosophy of religion, and ethics and social and political philosophy.

Physical Education (PHED)

Health, Sport, and Leisure Studies

Activity Courses

All activity courses are open to students with handicapping conditions; accommodations for these students are made on individual basis. Students unable to participate in regular activity classes may be placed in an individualized class (PHED 170,171, 172, 173) if so desired.

100 Foundations of Exercise and Fitness (1:1:0). Development of an understanding of cardiovascular health and fitness through a personal exercise program. Special emphasis will be given to strength, endurance, and weight management as components of conditioning. This course is a prerequisite or corequisite to all physical education laboratory classes (101-200). Physical education majors enrolled in laboratory classes are not required to take PHED 100 as a prerequisite or corequisite.

101 Soccer and Volleyball (1:0:2). Basic skills, rules and strategies of each sport.

103 Beginning Fencing (1:0:2). Basic skills, techniques and rules of foil fencing.

104 Noncontact Lacrosse (1:0:2). Basic skills, rules and strategies.

105 Aerobics, Basic Conditioning (1:0:3). Develop skills for cardiovascular fitness programs.

106 Beginning Gymnastics (1:0:2). Basic skills and techniques of gymnastics.

107 Folk, Square, and Social Dance (1:0:2). Basic steps, sequences, and style of each dance form.

108 Weight Training and Body Conditioning (1:0:2). Principles and techniques of individualized progressive resistance exercise and cardiovascular fitness.

109 Beginning Ice Skating (1:0:2). Fundamental skills necessary to select equipment and to skate forward and backward. Fee.

110 Beginning Swimming (1:0:2). Introduction open only to nonswimmers. Emphasis on becoming safe swimmers. Fee.

111 Basketball and Soccer (1:0:2). Basic skills, strategy, and rules of each sport.

116 Combative Sports, Games, Unarmed Combat and Wrestling (1:0:2). Development and skill in combative sports.

121 Flag Football and Basketball (1:0:2). Basic skills, rules, and strategy for each sport.

124 Basketball and Softball (1:0:2). Basic skills, rules, and strategy for each sport.

131 Volleyball and Field Hockey (1:0:2). Basic skills, strategy, and rules for each sport.

133 Tennis for All (1:0:2). Basic ground strokes, volley, serve and smash, rules, strategy, and terminology.

140 Golf (1:0:2). Grip, stance, swing, rules, and etiquette. Fee.

148 Badminton and Bowling (1:0:2). Basic skills, rules, terminology and strategy. Fee.

150 Intermediate Swimming (1:0:2). Increase proficiency, endurance and versatility in aquatics. Fee.

151 Beginning Tennis (1:0:2). Basic skills, rules, terminology, and
strategy for beginners.

152 Tennis for the Advanced Beginner (1:0:2). Prerequisite PHED 151 or equivalent experience. Continuation of basic ground strokes, serve, volley, and smash; racket selection, rules, terminology, and strategy.

153 Intermediate Tennis (1:0:2). *Prerequisite PHED 152 or equivalent experience. Basic skills with the introduction of the chop, slice, half volley and lob; singles and doubles strategy.

154 Advanced Tennis (1:0:2). *Prerequisite PHED 153 or equivalent skill level. For experienced players to strengthen skills, strategies, and tactics.

*Students taking tennis classes are required to purchase a can of new balls and a United States Tennis Association Rule Book.

161 Archery and Golf (1:0:2). Basic skills, techniques, and rules of target archery and golf.

165 Racquetball (1:0:2). Fundamental skills, techniques, and strategy of playing singles and doubles racquetball.

170, 171, 172, 173 Individual Physical Education (2:0:3 for each). Prerequisite Permission of instructor. Students unable to participate in the regular program of physical education may register for this course. Activities based on the physician's recommendation.

200 Swimmers (1:0:2). Prerequisite Students must swim 50 meters of crawl or breast stroke. Speed, endurance and perfection of strokes and diving. Fee.

206 Gymnastics for Children and Youth (3:1:4). Prerequisite PHED 106 or permission of instructor. Fundamentals and progressions in teaching gymnastics, preschool through secondary school age. 12 to 15 hours of field experience involving lab.

207 Intermediate Folk, Square and Social Dance (1:0:2). Prerequisite PHED 107 or permission of instructor. Advanced skills in square and social dance with new steps and styles to folk and social dances.

210 Advanced Life Saving (1:0:2). Meets certification requirements for Advanced Life Saving for the American Red Cross. Fee.

211 Sports Officialing and Intramural Administration (3:2:3). Application of officiating techniques and organization of intramural programs.

250 Water Safety Instructor (2:0:3). Meets the Water Safety Instructor requirements for the American Red Cross. Fee.

255 Basic Scuba Diving (2:0:3). (See PRLS 255.)

300 Kinesiology (3:3:0). Prerequisites BIOL 124, 125. Study of human movement and cinematographic analysis.

301 Physical Education in Elementary School (3:3:0). Planning experiences in physical education for children. Field experience (10 to 12 hours) in public schools required. Not open to physical education majors.

303 Professional Dimensions of Physical Education (3:3:0). Introduction to the professional practice of physical education.

304 Sport, Culture, and Society (3:3:0). Prerequisite PHED 303 or permission of instructor. Sport viewed from historical, political, economic, and cultural perspectives. Spring only.

306 Psychomotor Learning (3:3:0). Prerequisite EDUC 302, 313, or permission of instructor. Learning theory, processes, and conditions as they affect movement. Field experience required. Spring only.

308 Developmental Physical Education (3:2:2). Prerequisite BIOL 124, EDUC 302, or permission of instructor. Chronic and functional impairments as they affect physical education and exercise. Saturday morning lab and an adapted aquatics lab. Fall only.

311 Tennis, Folk, Square, and Social Dance (2:0:3). This course is designed for physical education majors to improve their basic skills and knowledge in tennis, folk, square, and social dance through an in-depth study of skill progressions and drills for teaching. Skill analysis and peer group teaching are included.

312 Flag Football and Volleyball (2:0:3). This course is designed for physical education majors to improve their skills and knowledge through in-depth study of basic skills progressions and drills for teaching. Skill analysis and peer group teaching are included.

315 Archery, Badminton, and Golf (2:0:3). For physical education majors only. Basic skills progressions and drills including skill analysis and peer group teaching.

317 Weight Training/Body Conditioning: Track and Field (2:0:3). This course is designed for physical education majors to improve their skills and knowledge through in-depth study of basic skills progressions and drills for teaching. Skill analysis and peer group teaching are included.

318 Basketball and Soccer (2:0:3). This course is designed for physical education majors to improve their basic skills and knowledge through in-depth study of skill progressions, drills for teaching. Skill analysis and peer group teaching are included.


365 Measurement and Evaluation in Physical Education (3:3:0). Prerequisite PHED 300, 303. Selection, administration, evaluation, and construction of measurement and evaluation tests and techniques in physical education; statistical analysis of data and survey of selected instruments. Spring only.


403 Curricular Experiences in Elementary School Physical Education (3:3:0). Prerequisite PHED 300, 303, 311, 312 or permission of instructor. Curricular experiences and manadols for elementary school physical education; requires 12 to 15 hours of field experience. Fall only.

410 Psychology of Sport and Coaching (3:3:0). Research, trends, and techniques of coaching.

415 Student Teaching in Physical Education (15). Prerequisites Completion of all courses in the approved program; admission to and good standing in the Teacher Education Program; acceptance in student teaching. Supervised clinical experience of a full semester in approved Virginia schools. Required experiences in elementary (7 weeks) and secondary (7 weeks) school settings. Includes participation of one week in school preschool workshops and related activities (fall) or one week special simulated workshop (spring), and weekly seminar sessions.

420, 421 Coaching of Sports (2:1:3), (2:1:3). Prerequisite Permission of chair. Sports usually coached at the secondary level with each activity scheduled on a semester basis and conducted independently for 2 credit hours. Principles and fundamentals of offensive and defensive play strategy, team and staff organization, and material for coaching.

441 Praticum in Athletic Training (1:2:0:0). Prerequisite PHED 430 and permission of department. Application of techniques and procedures in the care and prevention of athletic injuries in a selected environment under certified trainer supervision. Involves at least 100 hours of participation for each credit hour in athletic training.

442 Practicum in Physical Education (1:3:0:0). Prerequisite 54 hours or 84 hours and permission of department. Supervised professional practice in a selected area of interest. Student may repeat this course but no more than 3 hours credit may be given. Each credit hour requires a minimum of 60 hours of participation in the specialty over a period of 6 weeks. Areas selected with faculty adviser approval.

450 Physiology of Exercise (3:3:0). Prerequisite BIOL 124-125, PHED 300. Human physiological response to, and the effects of exercise. Fall only.

460 Management and Organization in Physical Education (3:3:0). Prerequisite PHED 303, 304, 306 and 308. Management, administration, and evaluation of elementary and secondary school physical education programs. Includes physical education
Physics Courses (PHYS)

Physics

100 Physics for Liberal Arts Majors (3:3:3). A study of the basic ideas of classical and modern physics and their applications in the context of contemporary social, economic, and political realities.

103, 104 Principles and Development of Modern Physics (4:3:3), (4:3:3). PHYS 103 prerequisite to PHYS 104. For nonscience majors. Topics include mechanics, relativity, cosmology, atomic physics, electricity and magnetism, nuclear physics, and elementary particles. Emphasis on historical, philosophical, and social aspects of modern physics.

106, 107 Physics for the Life Sciences (3:3:0) (3:3:0). Prerequisite One year of college mathematics. Topics include mechanics, properties of fluids and gases, sound, heat, electricity, light, the atom, the nucleus, and radiation. Basic principles of physics emphasizing applications to biological sciences.

111 Frontiers of Physics (1:1:0). Overview of subfields of physics, their interrelation, and the relationship of physics to other disciplines. Discussion of current research topics in physics; career opportunities.

141 Elementary Physics (3:3:0). One-semester course for nonscience majors covering the basic concepts of classical and modern physics. PHYS 142 is an optional one-credit lab for this course.

142 Elementary Physics Lab (1:0:1). Corequisite PHYS 141. Laboratory for PHYS 141.

201 Energy and Environment (3:3:0). Basic ideas of science and technology with emphasis on their interaction with our contemporary culture. Designed for science and nonscience majors with interests in current concerns of energy and environment. Origin, forms, uses, and distribution of energy and resulting environmental effects. Students who have taken PHYS 201 under the old title may not enroll for this course. May not be included for credit by physics majors within the 44 hours of physics courses required for B.S. degree or within the 31 hours of physics courses required for the B.A. degree.

225 Problems in Physics I (1:3:0:0). Prerequisite 24 hours and 3.00 average in physics and mathematics. Individual study of physics problems of current interest. May be taken 3 times.

250 University Physics I (4:3:1). Corequisite MATH 114. The first semester of three-semester calculus-based introductory physics sequence, designed primarily for science and engineering majors. Mechanics.

300/GOVT 300 Nuclear Weapons Technology and Politics (3:3:0). Prerequisite 54 hours and permission of instructor. A study of the history and development of nuclear weapons and nuclear strategy, the physical basis of nuclear weapons and their biological and physical effects, the effects of a nuclear war and the possible effectiveness of civil defense, the possibility of limited and winnable nuclear wars, arms control, nuclear proliferation, and opinion on nuclear issues. This course may not count toward the physics major requirement.

303 Classical Mechanics (3:3:0). Prerequisites PHYS 352, 353 and MATH 304. Motion of a particle in 1, 2 and 3 dimensions; systems of particles; non-inertial coordinate systems; equations of Lagrange and Hamilton.

305/ENGR 305 Electromagnetic Theory (3:3:0). (Same as ENGR 305). Prerequisites PHYS 352, 353 and MATH 304. Interaction of static charges, interaction of stationary currents, electromagnetic induction, Maxwell's equations.

306 Wave Motion and Electromagnetic Radiation (3:3:0). Prerequisite PHYS 305. Vibrating string, plane waves, interference, diffraction, polarization, electromagnetic waves, dispersion, and relativity.

307 Thermal Physics (3:3:0). Prerequisites PHYS 352, 361, or permission of instructor. Classical concepts of energy and temperature, basic definitions, first and second laws of thermodynamics, properties of pure substances, equations of state, introduction to classical and quantum statistics and their application to physical systems.

311, 312 Mathematical Methods in Physics and Engineering (3:3:0), (3:3:0). Prerequisites PHYS 352 and MATH 304 or 306. PHYS 311 or MATH 313 is prerequisite for PHYS 312. Math techniques as applied in physics and engineering. Ordinary and partial differential equations, special functions, Fourier series, Laplace transforms, integral equations, matrices, and complex variables.

315 Physics of Musical Sounds (3:3:0). Prerequisite MUSI 101 or 115 or permission of instructor. Physics of music. Topics include simple harmonic motion, vibration, temperemper, the ear, architectural acoustics, sound recording and reproduction. May not be included for credit by physics majors within the 44 hours of physics courses required for B.S. or within the 31 hours of physics courses required for B.A.

316 Sound and Light in the Arts (3:3:0). Nature of light, color and sound, mechanisms of vision and hearing, color addition; synthesis of musical sounds, computer-generated music and art; lasers; holography and fiber optics; recording and reproduction of sound and light. May not be included for credit by physics majors within the 44 hours of physics courses required for B.S., or within the 31 hours of physics courses required for B.A. Frequent use is made of demonstrations.

326 Problems in Physics II (1:0:0). Prerequisite 54 hours and 2.50 average in physics and mathematical science. Individual study of physics problems of current interest. May be taken 3 times.


343-345 College Physics (3:3:0)-3:3:0). (One hour recitation) Prerequisites 54 hours or 1 year of college-level science and one semester of college-level mathematics, or permission of instructor. Two-semester basic physics course with emphasis on topics of classical and modern physics of particular importance to science
majors. The principles of mechanics, heat, electricity, magnetism, optics, atomic and nuclear physics. (See Note 2(b) under Course Numbering at the beginning of Course Descriptions.)

344-346 College Physics Lab (1:0:1)-(1:0:1). Corequisites 343 (for 344) and 345 (for 346). Laboratory portion of two-semester basic physics course. (See Note 2(b) under Course Numbering at the beginning of Course Descriptions.)


351 University Physics II Laboratory (2:0:3). Corequisites MATH 213, PHYS 350. Experiments in electricity and mechanics.


353 University Physics III Laboratory (2:0:3). Corequisites MATH 304, PHYS 352. Experiments in optics and modern physics.

355 Computer Methods in Physics and Engineering (3:3:0). Prerequisites MATH 304 and PHYS 352 or 342 and knowledge of FORTRAN. A study of algorithms used to solve problems in physics and engineering and their computer implementation, data handling and data processing techniques in physics and engineering.

361 Modern Physics with Applications (3:3:0). Prerequisites MATH 304 and PHYS 352 or PHYS 342 and permission of instructor. Study of modern physics with emphasis on applications for scientists and engineers. Topics include modern optics, lasers, binding and energy bands in solids, electrical, thermal and magnetic properties of solids, semiconductors, radioactivity, nuclear reactions, radiation detectors, and applications of nuclear physics to other sciences.

402 Introduction to Quantum Mechanics and Atomic Physics (3:3:0). Prerequisite PHYS 303 or permission of instructor. Experimental basis of quantum mechanics; the wave function; systems in 1, 2 and 3 dimensions.

407 Senior Laboratory in Modern Physics (3:3:0). Prerequisite 84 hours. Experiments in modern physics involving advanced techniques in electronics, optics, nuclear physics, and solid state. Typical experiments: the Frank Hertz Experiment, Hall Effect, electron paramagnetic resonance, Mossbauer Effect.

408 Senior Research (2-3-0:0). Prerequisite 84 hours. The student works under the guidance of a faculty member on a research project in experimental or theoretical physics.

414 Nuclear and Particle Physics (3:3:0). Prerequisite PHYS 402. Accelerators, detectors, and related electronics; nuclear and elementary particle structure; symmetries and conservation laws; the electromagnetic, weak and hadronic interactions; nuclear models; the quark model; nuclear science and technology.

416 Special Topics in Modern Physics (1:2:0). Prerequisite 84 hours. Topics of major current interest in modern physics with emphasis on the breadth of physical understanding needed to approach many of today's problems. Seminar every other week.

417 GEOL 417 Geophysics (3:3:0). Prerequisites GEOL 101, 102, 201, 301, MATH 113, 114, PHYS 250. Corequisites MATH 213: PHYS 350, 351. Seismological and gravitational theory and application to an understanding of the earth's interior. The geology requirement may be waived for physics and engineering students with sufficient background.

428 ASTR 428 Relativity and Cosmology (3:3:0). Prerequisites PHYS 352, MATH 214 or 216; and PHYS 303, 305 or permission of instructor. Special relativity, 4-dimensional space-time, general relativity, non-Euclidian geometries, geodesic and field equations, tests of general theory of relativity, black holes, cosmology, models of the universe, remnants blackbody radiation, big bang cosmology, thermodynamics and the universe.

500 Physics for High School Teachers (3:3:0). Prerequisite certification as a secondary school physics instructor or permission of department. Techniques of teaching high school physics. Introduction 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). Prerequisite Graduate standing. 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 PHYS 402 Introduction to Quantum Mechanics and Atomic Physics (3:3:0). Prerequisite PHYS 303 or permission of instructor. Experimental basis of quantum mechanics; the wave function; systems in 2, 3 and 4 dimensions.

510 Mechanics of Continuous Media (3:3:0). Prerequisites PHYS 303 and 305. Study of continuous media. Includes 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). Prerequisite PHYS 402 or 502. Crystal structures, binding, lattice vibrations, the free electron model, metals, semiconductors and semiconductor devices, superconductivity, magnetism.

513 Applied Electromagnetic Theory (3:3:0). Prerequisite PHYS 305, 306, MATH 313, 314 or equivalent. Classical electromagnetic theory with applications. Topics include electrostatics, magnetic fields and materials, electromagnetic wave propagation, wave guides, transmission lines, radiation and antennas.


520 The Physics of Energy and Environmental Technology (3:3:0). Prerequisite B.A. or B. S. degree in natural science or mathematics or permission of instructor. 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). Prerequisite Graduate standing or permission of instructor. Selected topics from recent theoretical works and developments and applications. Designed to satisfy the needs of the professional community to keep abreast of current developments.

Plan for Alternative General Education: See PAGE

Portuguese Courses (PORT)

Foreign Languages and Literatures

Placement: See Admission.

101, 102 Elementary Portuguese (3:3:1), (3:3:1). Introduction to Portuguese, including basic grammar, aural training, the development of oral skills and reading proficiency. Introduction to the life and culture of Portuguese-speaking countries through selected readings and through programs in the language lab. Must be taken in sequence.

201, 202 Intermediate Portuguese (3:3:1). Prerequisite PORT 101, 102 or equivalent. Intensive review of basic grammar; introduction to more difficult grammatical constructions and patterns of usage; continued development of reading proficiency and of aural and oral skills; continued study of the life and culture of Portuguese-speaking countries.

http://catalog.gmu.edu
Psychology Courses (PSYC)

Psychology

100 Basic Concepts in Psychology (3:3:0). Prerequisite to all other courses in psychology. Introduction to psychology as a scientific discipline. Includes an examination of concepts and methods in learning, motivation, development, personality, and measurement.

211 Developmental Psychology (3:3:0). Prerequisite PSYC 100 or permission of instructor. Review of major developmental theories include perspectives of childhood, adolescence, adulthood, and old age.

220 Personality Theory (3:3:0). Prerequisite PSYC 100 or permission of instructor. Analysis of personality development, emphasizing the theoretical framework of intelligence, achievement, and applied science.

300 Analysis and Interpretation of Psychological Data (4:3:2). Prerequisite 6 hours of psychology including PSYC 100 (grade of C or better) or permission of instructor. Descriptive and inferential statistics in design, analysis, and interpretation of psychological research with practical applications using computers.

303 Computer Applications in Biobehavioral Research (3:3:0). Prerequisites PSYC 100 and ENGR 240 or permission of instructor. Survey of computer applications to research in perception, learning, cognition, motivation, and physiological psychology. Software and hardware required and their implementation for biobehavioral experiments are studied.

304 Principles of Learning (4:3:2). Prerequisite PSYC 300 (grade of C or better) or permission of instructor. Experimental methodology in the context of the basic principles of learning, including such topics as classical and instrumental conditioning and discrimination learning.

305 Memory and Cognition (4:3:2). Prerequisite PSYC 300 (grade of C or better) or permission of instructor. Experimental methodology within the context of discrimination, concept formation, verbal learning, psycholinguistics, and memory.

309 Sensation, Perception, and Information Processing (4:3:2). Prerequisite PSYC 300 (grade of C or better) or permission of instructor. Experimental methodology within the context of perceptual psychology, including such topics as psychophysics, perceptual organization, and constancies.

313 Child Psychology (3:3:0). Prerequisite 6 hours of psychology including PSYC 100, or permission of instructor. Study of processes of human psychological development from conception to adolescence including such topics as genetic factors, emotional and intellectual growth, and environmental influences.

314 Adolescent Psychology (3:3:0). Prerequisite 6 hours of psychology including PSYC 100, or permission of instructor. Study of the biological and cultural changes accompanying adolescence, including the effect of these changes on emotional, intellectual, and social development.

320 Psychological Tests and Measurements (4:3:2). Prerequisite PSYC 300 or permission of instructor. Examination and application of principles underlying the theory, interpretation, and administration of psychological tests; including a study of tests of intelligence, achievement, and ability.

321 Counseling Psychology (3:3:0). Prerequisite PSYC 325 or permission of instructor. Review of the theories and methods in psychological counseling.

322 Behavior Modification (3:3:0). Prerequisite PSYC 220 or permission of instructor. Examination of experimental principles of human and animal learning within the theoretical framework of applied behavior analysis, including the design, implementation, and evaluation of operant intervention programs across a wide variety of human situations and the opportunity to apply this approach.

323 Clinical and Social Psychology Research Techniques (4:3:2). Prerequisite PSYC 300 or permission of instructor. Review and application of some research techniques including interviewing, survey analysis, and process analysis.

325 Abnormal Psychology (3:3:0). Prerequisite PSYC 100 or permission of instructor. Study of development of abnormal behavior patterns, including such topics as methods of diagnosis and prevention of serious mental disorders such as psychosomatic disorders, psychoses, character disorders, and mental retardation.

326 Therapeutic Communication Skills (3:3:0). Prerequisite PSYC 325 or permission of instructor. Introduction to understanding and use of basic therapeutic communication skills employed in clinical and counseling psychology.

330 Psychology of Adjustment (3:3:0). Prerequisite PSYC 100 or SOCI 101 or NURS 250 or EDUC 200 or equivalent. Nature of effective and faulty patterns of adjustment. Factors in healthy and unhealthy personality development, unique motivation patterns of individuals, and influence of personally significant groups on adjustment. Resources for personal growth and application of contemporary psychological principles to achievement of increased intellectual, emotional, and social competence.

360 Theories and Systems of Psychology (3:3:0). Prerequisite 9 hours of psychology or permission of instructor. Review of various systems and theories that have played a role in contemporary psychology, including association theory, structuralism, behaviorism, functionalism, Gestalt psychology, and psychoanalysis.

362 Psychology of Women (3:3:0). Prerequisite PSYC 100, BIOL 103, 104, or equivalent, or permission of instructor. Behavior and attitudes of women; influence of sex chromosomes and sex hormones on behavior; influence of culture on sex role differentiation; theories of sex role development.

365 History of Psychology (3:3:0). Prerequisite 9 hours of psychology or permission of instructor. Survey of man's attempts to understand himself systematically from the classical age to the present, including various models of man.


373 Physiological Psychology Laboratory (1:0:1). Prerequisite BIOL 103-104, or equivalent; corequisite or prerequisite PSYC 372, PSYC 300 recommended; or permission of instructor. Functional anatomy and physiology of the brain, including dissection of brain and eye, demonstration and practice in techniques of studying brain mechanisms of behavior. Psychology majors are advised to take PSYC 372 concurrently with PSYC 373.

410 Motivation and Emotion (3:3:0). Prerequisite PSYC 100, BIOL 103, 104, or permission of instructor. Experimental methodology within the context of the concepts and principles that determine human and animal motivation, including such topics as instincts and drives.

411 Comparative Psychology (3:3:0). Prerequisite PSYC 100, BIOL 103, 104, or permission of instructor. Experimental methodology within the context of a study of behavior through the phylogenetic continuum, including such topics as species-specific behavior, early experience, and learning.

414 Behavior Disorders of Childhood (3:3:0). Prerequisite PSYC 313 and 325 or permission of instructor. Review of the theories, methods, and research dealing with emotional and behavioral disorders of children.

415 Psychological Factors in Aging (3:3:0). Prerequisite 3 hours in PSYC or SOCI. Examination of the sensory, perceptual, intellectual, and personality changes that occur in older people. Common adjustment problems as well as more serious adjustment difficulties are discussed. Applications of various personality theories of aging.

416 Seminar in Developmental Psychology (3:3:0). Prerequisite 6 hours of developmental psychology or permission of instructor.
Rotating topics (e.g., Cognitive and Perceptual Development, Personality and Social Development) to be announced in advance. May be repeated once for credit.

420 Clinical Methods in Psychology (3:3:0). Prerequisite PSYC 325 or permission of instructor. Historical and empirical foundations of clinical psychology, including a review of current clinical practice.

421, 422 Undergraduate Practicum in Psychology (3:3:0). Prerequisite PSYC 325 and 326 by permission of Clinical Review Committee. Supervised experience in application of psychological principles requiring work in a nonclassroom setting.

423 Group Psychotherapy Techniques (3:3:0). Prerequisite PSYC 220 or permission of instructor. Review of theory and methods of the group therapy with emphasis on humanistic and interpersonal approaches, including applications to family therapy, alcoholism, and drug abuse.

425 Seminar in Abnormal Psychology (3:3:0). Prerequisite PSYC 325 or permission of instructor. Selected topics include stigma, specific forms of psychopathology, psychopathological issues, or deinstitutionalization.

435 Personnel Training and Development: A Psychological Perspective (3:3:0). Prerequisite PSYC 230; prerequisite or corequisite PSYC 320; or permission of instructor. An overview and critique of training methods currently in use in industry from the viewpoint of psychological theory, including simulations, on-the-job training, supervisory/leadership skills training, computer-assisted instruction, and programmed texts. Principles of needs analysis, program development, and program evaluation are discussed within the framework of industrial psychology.

460 Independent Study in Psychology (1-3:0:0). Prerequisite(s) Required experimental course, a 2.50 GPA in psychology, and a written proposal approved before registration by instructor and the department chair. Investigation of a psychological problem according to individual interest with stress on research methods. By permission of chair, a student may take a second semester for a maximum of 6 hours of credit. Students meet once a week to discuss their study.

461, 462 Special Topics (3:3:0-3:0). Prerequisite Permission of instructor. Selected topics reflecting interest in specialized areas. Announced in advance.

499 Senior Thesis (3:0:0). Prerequisite Psychology major with 84 hours, an experimental psychology lab course, 3.00 GPA in psychology, PSYC 460, permission of instructor, and prior approval of the thesis proposal. Directed research on a topic agreed upon by student and adviser. The student should take PSYC 460 with the same adviser in order to develop a thesis proposal prior to registering for PSYC 499. The student must complete a thesis and defend it orally before the adviser and two faculty members. With permission of department, students may take a second semester for a maximum of 6 hours credit.

506 Theories of Personality (3:3:0). Prerequisite 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). Prerequisite PSYC 313 or 211. Major theories of infant and child development including works of Piaget, Freud, Erikson, and Spitz.

513 Infant Development (3:3:0). Prerequisite PSYC 313 (210) or permission of instructor. Examination of current issues, research methods, and clinical evaluation techniques in the field of infant development.

530 Human Factors Engineering (3:3:0). Prerequisite PSYC 230 or an experimental lab course or permission of instructor. 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). Prerequisite PSYC 230 or PSYC 636 or permission of instructor. 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). Prerequisite PSYC 300 or SOCI 221 or equivalent. Course is designed to acquaint students with the theory, method, and practice of survey research; requires students to complete a survey research project.

548, 549 Practicum in Gerontology (3:0:0-3:3:0). Prerequisite completion of 2 of the 3 required core courses in the gerontology certificate program. Practical experience in a gerontological setting under supervision of a qualified professional. 150 contact hours per 3 semester hours credit.

553 Quantitative Methods I: Advanced Statistics (4:3:2). Prerequisite A screening test will be given the first evening of class. This test must be passed to take the course. Topics in introductory psychological statistics from an advanced perspective. Additional topics are included. Lab provides introduction to use of computer packages in data handling and analysis. Required for degree students. Requirement may be satisfied by demonstrating competence on an independent examination.

559 Drugs, Hormones, and Behavior (3:3:0). Prerequisite PSYC 372 or equivalent or permission of instructor. Overview of the chemistry of behavior, including 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.

560 Advanced Applied Social Psychology (3:3:0). Prerequisite PSYC 231. Study of major trends in social psychological research with emphasis on the ethical and practical problems posed by human experimentation. Topics include attitude measurement, attitude change, conformity, social perception, and small group interaction.

564 Sensory Processes (3:3:0). Prerequisite 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). Prerequisite 6 hours of child psychology and a course in experimental psychology. Experimental study of child development. Topics include biogenetic factors in development, sensory processes, learning, perception, motivation, language, and cognitive development.

581/ENGL 581 Survey of Psycholinguistics (3:3:0). Prerequisite ENGL 391 or PSYC 305 or permission of instructor. Study of the psychological basis of human language acquisition and competence, including research on aphasia, association, autism, second language learning, grammatical transformations, and the psychological reality of transformational rules.

592 Special Topics (3:3:0). Prerequisite Permission of instructor. Special topics reflecting interest in specialized areas.

Public Administration Courses (PUAD)

Public Affairs

502 Theory and Practice of Public Administration (3:3:0). Prerequisite Graduate standing or permission of department. Survey and review of the field of public administration, including development of U.S. governmental administration, theories of administrative organization and behavior, administrative processes, management of people and money, administrative responsibility, and the nexus of public policy making and implementation.

503 The Political Environment of Public Management (3:3:0). Prerequisite Graduate standing or permission of department. 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.

http://catalog.gmu.edu
Regional Cultures Courses (LAC)

History

151 Latin America (3:3:0). Interdisciplinary introduction to Latin America. Focus on crucial contemporary issues and their related cultural and historical origins, utilizing the perspectives and methods of the social sciences and humanities. Problems of social change and assimilation, nationalism, and international relations in selected areas.

152 Sub-Saharan Africa (3:3:0). Interdisciplinary introduction to sub-Saharan Africa. Focus on crucial contemporary issues and their related cultural and historical origins utilizing the perspectives and methods of the social sciences and humanities. Problems of social change and assimilation, nationalism, and international relations in selected areas.

153 Asia and the Western Pacific (3:3:0). Interdisciplinary introduction to Asia and the Western Pacific. Focus on crucial contemporary issues and their related cultural and historical origins, utilizing the perspectives and methods of the social sciences and humanities. Problems of social change and assimilation, nationalism, and international relations in selected areas.

154 North Africa and the Middle East (3:3:0). Interdisciplinary introduction to North Africa and the Middle East. Focus on crucial contemporary issues and their related cultural and historical origins, utilizing the perspectives and methods of the social sciences and humanities. Problems of social change and assimilation, nationalism, and international relations in selected areas.

155 Comparative Cultures (3:3:0). Prerequisite Two LAC Regional Cultures courses or equivalent and permission of instructor. Cross-cultural and interdisciplinary seminar examining significant contemporary themes that affect the Third World.

Religious Studies Courses (RELI)

Philosophy and Religious Studies

The courses of study are designed to serve a variety of needs and interests. With careful planning students may acquire the necessary intellectual tools and scholarly background for further academic or professional study. The Religious Studies Track within the philosophy major is an excellent vehicle for this endeavor.

Areas of study may be identified by the second digit of the course numbers as follows:

1-History of Religions
2-Religion and Culture
3-Religious Literature
4-Religious Thought

100 The Human Religious Experience (3:3:0). An examination of the primary forms of expression that belong to religion, and of the nature and functions of religion. Topics to be considered may include the idea of ultimate reality; religious interpretations of nature; the person and the need for salvation; symbol, parable, and myth; magic and ritual; functions of religion in society; mystical experience. Efforts will be made, through considerations of more specific topics such as these, to address the general question of the nature of religion and to consider modern as well as classical interpretations of religious ideas. This course may not be taken by students who have had RELI 132.


213 Hindu Religion and Philosophy (3:3:0). Hindu religious and philosophical developments from origins through formative periods.

231 Religion in America (3:3:0). Religious heritage in American culture; growth of denominations and sects; interrelationship of religion and socio-political life.

237 Religious Dimensions of Contemporary Dramatic Literature (3:3:0). Contemporary religious thinking through study of selected modern plays of the Western stage. Focuses on such themes as the self, human finitude, loneliness and alienation, love and redemption, personal guilt and social responsibility, suffering and death.


271 Contemporary Religious Ethics (3:3:0). Prerequisite 24 hours or permission of instructor. Philosophical examination of major theoretical and practical issues in contemporary Judeo-Christian morality.

300 Approaches to the Study of Religion (3:3:0). Prerequisite 3 credits in PHIL or 3 credits in RELI or permission of instructor. Methods employed in study of religious phenomena. Diverse assumptions of different perspectives and how they affect the understanding of religious phenomena. Illustrative readings from a variety of perspectives are critically evaluated, including the anthropological, historical, linguistic, literary, philosophical, psychological, and sociological approaches.

314 Chinese Philosophies and Religious Traditions (3:3:0). Prerequisite RELI 212 or permission of instructor. A survey of major religious traditions and philosophical themes of China including Confucianism, Taoism, and Chinese Buddhism and Neo-Confucianism. The course examines the foundation of the Chinese world view and spirituality by investigating the diverse religious traditions that have created tensions and harmony among them.

315 The Buddhist Tradition (3:3:0). Prerequisite RELI 212 or permission of instructor. A survey of the Buddhist religious traditions. The main thrust of the course includes, but is not limited to, the historical development of Buddhism in India, China, and Japan, examining both Theravada and Mahayana traditions, philosophical and religious significance of Buddhism, social and political implications of the Buddhist traditions in the South Asian and East Asian countries.

331 Civil Religion in America: The Americanization of God (3:3:0). Prerequisite RELI 231 or permission of instructor. Development of American political religion, or religious nationalism/ Americanism; the concept of America as a New Israel; the myths, rituals, symbols, and liturgical calendar of the nation.

332 American Religion in Social Thought and Action (3:3:0). Prerequisite RELI 231 or permission of instructor. Churches involvement in social thought and action during the nineteenth and twentieth centuries.

333 Contemporary Religion in America: Diversity and Dissent (3:3:0). Prerequisite RELI 231 or permission of instructor. Nature of consensus and dissent.

337 Mysticism: East and West (3:3:0). Prerequisite 3 hours in RELI 212 or ANTH 207 or HIST 281, 282, or permission of instructor. Comparative treatment of major expressions of mysticism in East and West through exploration of various ways of understanding mystical experience. Readings and discussion emphasize one or more of the Eastern (Hinduism, Buddhism, Taoism, Zen) and Western traditions (Judaism, Christianity, Islam).

RELI 351 Nationalism and Universalism in the Quest for Jewish Identity (3:3:0). Prerequisite 3 hours in RELI 212 or 251 or ANTH 207 or HIST 281, 282, or permission of instructor. Examination of the tension inherent in Israel's concept of herself as a chosen and covenantal people with a call to universal mission. The study will focus on the recurrence and attempted resolution of this tension, Zion and the issue of exclusivity versus universalism in
Judaism in Biblical and modern times.

352 Judaism Between the Old and New Testaments (3:3:0). Prerequisite 3 hours of RELI 251 or 252 or permission of instructor. A survey of Jewish religion, culture, and history in the period between the Old and New Testaments. Developments in Intertestamental Judaism crucial to the formation of later Judaism and Christianity will be examined.

370 Judaism: Life and Thought (3:3:0). Prerequisite RELI 211 or RELI 251 or permission of instructor. A study of Judaism from Biblical times to contemporary American developments, with a focus on medieval and modern Judaic life and thought.

371 History of Western Christian Thought I: Classical and Medieval (3:3:0). Prerequisite 3 credits in RELI or PHIL or permission of instructor. Development of Christian doctrine from the close of the New Testament period to the Reformation. Relationship between Greek, Roman, and Medieval philosophy and the theological expressions of belief.

372 History of Western Christian Thought II: Modern (3:3:0). Prerequisite 3 credits in RELI or PHIL or permission of instructor. Development of Christian doctrine from Reformation to present. Effects of scientific empiricism, existentialism, and linguistic analysis on Protestant and Catholic theology.

373 Contemporary Issues in Religious Thought (3:3:0). Prerequisite junior standing or permission of instructor. A consideration of selected issues in contemporary religious thought, especially with reference to ways in which those issues are defined and treated in the light of unique demands made upon religion by modernity. Issues to be considered may include current redefinitions of the idea of "God," the role of myth and interpretation; the impact of Eastern thought on Western religious experience; contemporary problems in religious ethics; secularization; role of religious institutions in modern society; religion, society, and technology.

374 Islamic Thought (3:3:0). Prerequisite RELI 211; 54 hours or permission of instructor. Major components of Islamic thought and its role in regulating the various aspects of social life in the Muslim World. Emphasis on religious foundation of Islamic society and culture.

376, 377 Special Topics in Religious Thought (3:3:0), (3:3:0). Prerequisite 3 hours in philosophy or religion or permission of instructor. Selected topics from a philosophical perspective. Topics vary.

490 Comparative Study of Religions (3:3:0). Prerequisite 9 credits in RELI (include RELI 211 and 212) or permission of instructor. A cross-cultural examination of the comparative aspects of religious phenomena. The course examines the significance of religious phenomena from diverse religious and cultural perspectives, and investigates the structure of the patterns of religious phenomena that have appeared in world cultures and civilizations.

591 Current Issues in Religious Studies (3:3:0). 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.

Russian Courses (RUSS)

Foreign Languages and Literatures

Placement: See Admission Procedures.

101 Elementary Russian I (3:3:1). Designed for students with no knowledge of Russian. Introduction to Russian, including elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required.

102 Elementary Russian II (3:3:1). Prerequisite RUSS 101 or permission of department. Continuation of RUSS 101. Lab work required.

109 Intensive Elementary Russian (6:6:2). Equivalent to RUSS 101 and 102 taught in a single semester. Recommended for students who desire an intensive introduction to Russian. May not be taken for credit in combination with RUSS 101 and 102. Lab work required.

201 Intermediate Russian I (3:3:1). Prerequisite RUSS 102 or 109, or appropriate placement score, or permission of department. Further development of skills in listening, speaking, reading, and writing. RUSS 201 and 202 must be taken in sequence. Lab work required.

202 Intermediate Russian II (3:3:1). Prerequisite RUSS 201 or appropriate placement score or permission of department. Application of language skills to reading, composition, and discussion. Lab work required.

209 Intensive Intermediate Russian (6:5:2). Prerequisite RUSS 102 or 109, or appropriate placement score, or permission of department. Equivalent to RUSS 201 and 202 taught in a single semester. May not be taken for credit in combination with RUSS 201 or 202. Lab work required.

252 Russian Conversation and Composition (3:3:0). Prerequisite RUSS 202 or permission of instructor. Development of students' ability to express themselves orally on topics of current interest and everyday situations; composition provides practice in more difficult forms of expression.

300 Field Study in Russian Culture (1-3:0:0). Prerequisite HIST 328 or 329, GEOG 230, RUSS 333 or 354, or permission of instructor. Study tour to Soviet Union of between 2 and 3 weeks. Students must attend a series of lectures before the tour and must consult with the designated faculty member in advance of the trip. May be taken in Russian culture resulting in a term paper or report.

303 Russian Advanced Conversation (3:3:0). Prerequisite RUSS 202 or equivalent. Development of oral proficiency, including current Soviet expressions.

310 Readings in Russian Literature (3:3:0). Prerequisite RUSS 202 or permission of instructor. Readings of Russian literary works in the original language with lectures, discussions, and examination in Russian. This course may not be taken by anyone who has previously taken and satisfactorily completed RUSS 254. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

311 Contemporary Soviet Short Fiction (3:3:0). Prerequisite RUSS 202 or equivalent. Reading and discussion of recent short stories by the best-known Soviet writers of today. Readings in original language, with lectures and discussion in Russian. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

325 Major Russian Writers (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Study of the works of major Russian writers in translation; course work in English. Writers to be studied may vary. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

326, 327 A Survey of Russian Literature (3:3:0), (3:3:0). Prerequisite 54 hours or permission of instructor. RUSS 326 consists of a survey of Russian literature from its beginning to 1880. RUSS 327 consists of a survey of Russian literature of the late nineteenth and the twentieth centuries. Course work in English. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

353 Russian Civilization (3:3:0). Prerequisite 54 hours or permission of instructor. Civilization and culture of Russia and the Soviet Union. Includes films, slides and music in addition to readings and lectures. Course work in English. May be taken toward fulfillment of the non-Western culture requirement for the B.A. degree.

354 Contemporary Soviet Life (3:3:0). Prerequisite 54 hours or permission of instructor. Social life, art, economics, education, view of life, and personal aspirations of the Soviet citizen today. Course work in English. May be taken toward fulfillment of the non-Western culture requirement for the B.A. degree.

380, 381 Advanced Russian (3:3:0), (3:3:0). Prerequisite RUSS 202, 209, or equivalent. A comprehensive study of the more difficult characteristics of contemporary standard Russian in the areas of grammar, style, and vocabulary usage. Emphasis on developing fluency in oral and written expression.

401 Readings in the Social Sciences (3:3:0). Prerequisite 15 hours of Russian or equivalent. Reading, translation, and
discussion of Soviet materials in fields of history, politics, geography, and sociology.

402 Scientific Russian (3:3:0). Prerequisite 15 hours of Russian or equivalent. Reading, translation, and discussion of Soviet materials in natural and physical sciences.

410 Russian Poetry (3:3:0). Prerequisite 15 hours of Russian or equivalent. Historical development of Russian poetry and of representative works of the major poets. Reading is in Russian. Course work in English and Russian. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees.

415 The Slavs: A Cultural Survey (3:3:0). Prerequisite 54 hours or permission of instructor. Development of Slavic culture through the ages, with emphasis on the western (Polish, Czech) and southern (Yugoslav, Bulgarian) Slavs. Course work in English.

480, 481 Fourth Year Russian (3:3:0). Prerequisite RUSS 380, 381 or equivalent or permission of instructor. Advanced work in major grammatical and lexical topics of Russian. Application of theoretical principles in guided written and oral exercises.

490, 491 Independent Study (1-3:3:0). Prerequisite Russian studies major with 84 hours and permission of instructor. Research and analysis of a selected problem in language, literature, or culture in consultation with a member of the Russian studies faculty.

Social Work Courses (SOCW)

Social Work

100 Introduction to Social Work (1:1:0). Introductory classroom discussion and field observation on functions, values, methods, effectiveness, opportunities, and limitations of social work in helping people.

300 Alcoholism: Policies and Programs (3:3:0). This course is designed to help students obtain basic knowledge concerning primary issues related to alcoholism. Key concepts, theories, policies, and research regarding the use and abuse of alcohol are explored. Impact of the policies and programs on the well-being of ethnic minority and disadvantaged service populations is emphasized.

301 Laboratory in Interpersonal Communication (3:3:0). Prerequisite SOCI 101, PSYC 100, or permission of instructor. Emphasis on experiential learning of the biological, psychological, social, and cultural influences on the behavior of those who need and those who give help. Students are helped to examine their own behavioral and learning patterns, values, and attitudes to increase their ability to understand and help social work clients. Field service of at least 60 hours required.

323, 324 Human Behavior in the Social Environment I, II (3:3:0), (3:3:0). (Must be taken in sequence) Prerequisite SOCI 101, BIOL 104, or permission of instructor. A social systems approach unifying and integrating concepts and knowledge from biology, anthropology, sociology, and psychology about human behavior. Applications in professional practice in the social work literature and in the field experience.

351 Social Welfare Policy and Services (3:3:0). Prerequisite SOCI 101, PSYC 100, or permission of instructor. Introduction to social welfare, including its historical development, central concepts, institutional nature, and the functions of social work as a profession. Field investigation and analyses of human service delivery systems, settings, and roles of social work.

352 Social Welfare Policy and Service II (3:3:0). Prerequisite 54 hours or permission of instructor. Analysis of various social welfare policies; components of policy in our society. Examines the political, economic, and cultural influences on the policymaking process and the role of professors and citizen groups within it.

357 Methods of Social Work Intervention I (3:3:0). Prerequisite SOCW 301 or permission of instructor. Social work practice from a systems perspective. Particular emphasis to problem-solving activities with microsystems. The common core of knowledge, values, and skills essential to social work practice is analyzed to gain insight into social work functions and the role of the social worker as a change agent.

358 Methods of Social Work Intervention II (4:3:0). Prerequisite SOCW 301, 357, or permission of instructor. Continues a generic problem-solving model, focusing on group and macrointervention systems, settings, and skills. Emphasis on working with groups from treatment to task purposes. Group processes as goal formulation, contract setting, composition, termination, skills and techniques necessary for effective worker intervention are partial knowledge base of the course. Field service of 40-60 hours required.

423 Social Work with Adolescents (3:3:0). Prerequisite 54 hours and concurrent field experience or permission of instructor. Major needs of adolescents with their implications for social work practice. Problems of family and peer group relationships; occupational choice; sexual and scholastic adjustment; and special problems of racial and cultural alienation; alcohol and drug abuse; and delinquency. Studies various theoretical orientations and evidence from research. Analyzes both individual and group approaches to counseling and treatment.

424 Social Work Practice: Family and Group (3:3:0). Prerequisite SOCW 357 or permission of instructor. This course should be taken simultaneously with SOCW 453 or 454. Theoretical and applied concepts in social work practice with the family and the group. Opportunity through client contact in the practicum to develop skills and techniques in social group work and family practice.

425 Planning and Organizing for Community Change (3:3:0). Prerequisite 84 hours or permission of instructor. Community organization and planning, with specifics in the practice of grass-roots community organizations. Includes the community development approach, neighborhood study and analysis, direct services in the neighborhood, relevant roles for neighborhood residents in service delivery, independent social action, role of social work in planned change.

453 Senior Practicum I (5:3:0). Prerequisite SOCW 357, 358, 323 and 324 with a grade of at least C and recommendation of faculty; open only to social work majors. Under supervision instruction provided by field agencies, students are involved two days per week in learning through participation in the provision of service to individual clients, families, groups and/or communities, and in activities sponsored by or involving professional social workers. Weekly seminar and periodic faculty-agency consultations.

454 Senior Practicum II (5:0:0). Prerequisite SOCW 453, with a grade of at least C and recommendation of faculty. Field experience and weekly seminar.

455 Senior Practicum/Block Placement (10:0:0). Prerequisite SOCW 357, 358, 323, 324, 471; completion of all required social work courses except electives; open only to social work majors with 84 hours; GPA of 3.50 (in social work) and recommendation of the faculty and the director of field instruction. Under supervisory instruction provided by field agencies, students are involved four days per week in learning through participation in the provision of service to individual clients, families, groups and/or communities, and in activities sponsored by or involving professional social workers. Weekly seminar, completion of a special project, and periodic faculty-agency visits.

471 Research in Social Work (3:0:0). Prerequisite SOCI 221, SOCW 453, or permission of instructor. Principles and the theory underlying scientific inquiry. Emphasis on the use of research in social work practice, stops in conducting research, and utility of research efforts in developing and evaluating social work knowledge and skills.

475 Selected Topics in Social Work Policy (3:3:0). Prerequisite 54 hours or permission of instructor. Opportunity to study in depth special areas of social work that are of interest to students, faculty, and the social work community. Topics vary.

483 Selected Approaches to Social Work Intervention (3:3:0). Prerequisite 54 hours or permission of instructor. Taken simultaneously with SOCW 453 or 454 (Senior Practicum). Opportunity to examine critically personal use of different approaches to social work intervention currently employed in practice settings. Students thus have an opportunity to use with clients the technical skills these approaches require. May be taken more than once for credit.
499 Independent Study in Social Work (1-3:0-0). Prerequisite 84 hours and a research proposal approved by instructor before enrollment. Investigation of a research problem in the field of social work.

500 The Family and Alcohol Dependence (3). Prerequisite Senior or graduate standing. Examines the role played by the family in the etiology of alcohol dependence and the resources available in the community for prevention of this chronic and potentially fatal disease.

Sociology Courses (SOCI)

Sociology

101 Introductory Sociology (3:3:0). Introduction to basic sociological concepts. Aspects of human behavior; individual and group interaction; social mobility and stratification; status and class; race relations; urbanism; crime and criminology; social change and reform.

152 Modern Social Problems (3:3:0). Prerequisite SOCI 101 or permission of instructor. Sociological analysis of the problems of modern society, including those related to stratification, urbanism, family and kinship, cultural change, and deviant behavior.

201 Marriage and the Family (3:3:0). Prerequisite SOCI 101 or permission of instructor. Study of marriage and family in contemporary America. Human sexuality, premarital behavior, marital adjustment, socialization of children, family economics, divorce, and variations in family life.

205 Personal Worth and Collective Identity: The Socialization Process (3:3:0). Prerequisite 3 hours of sociology or permission of instructor. Institutional and personal dimensions of the socialization process analyzed in terms of norms, roles, group processes, and stratification. Development of self-concept throughout the life cycle is examined in terms of major agents of socialization. Focus on influence of certain ascribed status prescriptions in contemporary society—such as race, age, sex, and handicaps.

221 Statistics for the Behavioral Sciences (4:3:2). Prerequisite SOCI 101 or permission of instructor. Introduction to fundamentals of applied statistics as used in behavioral science to include descriptive statistics, inferential statistics, correlation-regression, analysis of variance, factor analysis, nonparametric statistics, and practical experience with calculators in applying statistical analysis to actual problems of the behavioral sciences.

240 Social Services in Society (3:3:0). Prerequisite SOCI 101 or permission of instructor. Survey course covering the institutions of health and welfare in society. Emphasis on various ameliorative efforts made by organizations to combat effects of social problems and discussion of the variety of skills and resources involved.

299 Independent Study (1-3:0-0). Prerequisite SOCI 101 and a written proposal approved before enrollment. Individual study of a sociological topic of interest to the student. Open to sociology majors only.

300 Social Control (3:3:0). Prerequisite SOCI 101 or permission of instructor. How various social institutions function to organize and regulate society. Topics include family, education, ideology, law, media, work, governmental planning, and stratification. Course serves as a foundation of many specialized courses offered by the department, especially those that focus on control of crime and delinquency.

301 Criminology (3:3:0). Prerequisite SOCI 101 or permission of instructor. Analysis of the nature, genesis, organization, and personal and social consequences of crime and criminal behavior. Examination of theories regarding punishment and treatment of criminals and prevention of crime; police and court systems, prisons and reformatories.

302 Sociology of Delinquency (3:3:0). Prerequisite SOCI 101 or permission of instructor. Types, causes, treatment, and prevention of delinquent behavior.

303 Sociological Research Methodology (4:3:2). Prerequisite SOCI 221 or permission of instructor. Introduction to empirical design in sociological research. Historical development, research design, sampling, methods of gathering data, sociometric scales, analysis and interpretation of results, and research reporting.

304 Sociology of Work (3:3:0). Prerequisite 3 hours of sociology or permission of instructor. Meaning and structure of the world of work and its relationship to other spheres of life.

305 Sociology of Small Groups (3:3:0). Prerequisite 6 hours of sociology or permission of instructor. Characteristics, structure, and processes of small group dynamics; theories and models of group analysis, techniques of observation and research in small groups; research theory and application of small group knowledge to such natural groups as mutual aid self-help groups, families, juvenile delinquent gangs, and task groups in work sites.

306 Demographic Analysis (Population Problems) (3:3:0). Prerequisite 6 hours of sociology including SOCI 101 or permission of instructor. SOCI 322 recommended. Influence of population structure distribution and change in vital rates of ecological, social, economic, and political problems of human society.

307 Sociology of Collective Behavior (3:3:0). Prerequisite 6 hours of sociology including SOCI 101 or permission of instructor. Analysis of crowds, mobs, and publics. Structure and function of social movements distinguished from other formal and collective behavior.

308 Sociology of Race Relations and Minorities (3:3:0). Prerequisite 6 hours of sociology including SOCI 101, or permission of instructor. History and changes in race, ethnic, and minority relations in modern society, with particular emphasis on blacks in American society.

310 Sociology of Deviance (3:3:0). Prerequisite 3 hours of sociology or permission of instructor. Analysis of the macro- and micro-level deviance producing processes, of the meaning and control of deviance, and of the major theoretical approaches to deviance.

311 Classical Sociological Theory (3:3:0). Prerequisite 9 hours in sociology including SOCI 101 or permission of instructor. Sociological tradition is explored through readings and discussions of ideas drawn from the writings of selected sociological thinkers such as Comte, Marx, Weber, Durkheim, and others.

315 Sociology of Sex Roles (3:3:0). Prerequisite 54 hours or permission of instructor. Changing conceptions of sex roles, both male and female, in contemporary society. Using historical and comparative data, considers the differential socialization of males and females in relation to the changing social structure in which it takes place.

325 Sociology of War and Conflict (3:3:0). Prerequisite 6 hours of sociology or permission of instructor. Study and analysis of war as a sociopolitical phenomenon in our society and in other societies. Total war and other conflict alternatives — such as limited war, nonnuclear war, subversion and sabotage, terrorism, guerilla war — are primary units of analysis.

326 Military Sociology (3:3:0). Prerequisite 54 hours or permission of instructor. The military from a sociological perspective. Topics include role of military in society, revolutions, civil-military relations, military as a profession, and military culture.

332 Sociology of Urban Communities (3:3:0). Prerequisite 6 hours of sociology including SOCI 101, or permission of instructor. The urban community: historical development, demography, and ecology of metropolitan areas; urbanism as a way of life; the emergence of suburbia; the future of cities.

340 Power in Society: Introduction to Political Sociology (3:3:0). Prerequisite 6 hours of any social science including SOCI 101, or permission of instructor. Analysis of how political power is related to other aspects of social life, especially such sociological approaches as class conflict, social consensus, elite analysis, and protest and revolution.

350 The Sociology of the Life Cycle (3:3:0). Prerequisite 3 hours of sociology or permission of instructor. Consideration of social influences on the timing of the life course. Topics include cultural variations in defining age roles, historical social development of generational subcultures, youth and age as new minorities, community structure and the aging process, the mass media and the American cult of youth, and explorations of alternative patterns of generational interaction.
373 The Community (3:3:0). Prerequisite 6 hours of sociology including SOCI 101, or permission of instructor. Examination of small to moderately sized communities ranging through the village, rural community, small town, and city community. The latter category includes city localities, ethnic villages, and suburban communities.

382 Education in Contemporary Society (3:3:0). Prerequisite 6 hours of sociology including SOCI 101 or permission of instructor. Study of education as a social institution, and its function as a socialization agency for social stability and social change. Emphasizes influences of social class elements on educational process and social organization of the U.S. public school system.

385 Sociology of Religion (3:3:0). Prerequisite 3 hours of sociology or permission of instructor. The personal and institutional dimensions of religious life in relation to major sociological concepts such as role, status, norms, and social aggregates. The student selects an aspect of religion for in-depth study.

390 Medical Sociology (3:3:0). Prerequisite 6 hours of sociology including SOCI 101, or permission of instructor. Examination of social context of disease and medical care, position of the professions in the medical care structure, delivery of medical care, and the physician-patient relationship under different systems practice. Etiology, incidence and prognosis of disease, and the restoration of patients to their normal social functions are studied in relation to the social environment.

397, 398 Fundamentals of Aging I, II (3:3:0), (3:3:0). Prerequisite 8 hours of biology, anatomy, or physiology and 3 hours of psychology or sociology, or permission of instructor. Physical, psychological, and social aspects of normal aging are examined as well as issues in health care, mental health, social services, education, and public policy in the field of gerontology. Field experience required. Students who have taken PSYC 216 may not credit for Fundamentals of Aging I and students who have taken UNIV 402 may not receive credit for Fundamentals of Aging II. SOCI 397 may not be taken for sociology major credit.

401 Social Stratification: The Study of Inequality (3:3:0). Prerequisite 12 hours of sociology including SOCI 101 or permission of instructor. Structure of social inequality from a stratification framework. Social class systems are analyzed through economic, political, and prestige structures. Includes the study of social mobility and differential life stages and opportunities.

402 Sociology of Punishment and Corrections (3:3:0). Prerequisite 6 hours of sociology including SOCI 101 or permission of instructor. Historical overview and theory of justice; analysis of the treatment of adult and juvenile offenders. Includes discussion of the origin and development of punishment, correction, rehabilitation, residential treatment, and the halfway house. Roles of legal and social agencies in the treatment process are compared and contrasted.

403 Sociology of Law (3:3:0). Prerequisite 54 hours or permission of instructor. Social relations and reciprocal influence between the law and (1) the American community, (2) special group interests in the U.S., (3) social change, and (4) social deviance.

405 Analysis of Social Data (4:3:3). Prerequisite 54 hours, SOCI 221, or permission of instructor. Overview of the management and analysis of empirical social science data, including file construction, scaling and measurement, data transformation, and treatment of missing data. Manipulation, management, and analysis data sets using computers is emphasized.

410 Social Surveys and Attitude and Opinion Measurements (3:3-0). Prerequisite 12 hours of sociology including SOCI 221 and 303 or permission of instructor. Survey research methods and techniques used in collecting and analyzing social data and techniques and methods of measuring social attitudes and opinions.

412 Contemporary Sociological Theory (3:3:0). Prerequisite 12 hours of sociology including SOCI 101 and 311, or permission of instructor. Contemporary sociological theorists such as Parsons, Merton, Mills, Berger, and Giddens are analyzed in terms of their relationship to major schools of contemporary sociological theory.

413 Seminar in Social Issues (3:3:0). Prerequisite 84 hours and 12 hours of sociology. Opportunity to apply to contemporary relevant issues the theoretical perspectives and methodological skills previously learned.
515 Applying Sociology (3:3:0). Prerequisite Undergraduate senior status in sociology or graduate status. Course provides overview of the ways sociologists have applied their theoretical and methodological skills and understanding in sociological practice in nonacademic settings.

517 Racial and Ethnic Relations: American and Selected Global Perspectives (3:3:0). Prerequisite Undergraduate senior status in sociology, graduate standing, or permission of instructor. Demographic purview of racial and ethnic groups in the United States; racial and ethnic groups as human-social-minority groups. Factors making for minority status including personality factors, group cultural factors; reactions of racial and ethnic minorities to minority status; programs, methods, social movements, and philosophies seeking to change minority group status.

525 Current Research in Sex and Gender (3:3:0). Prerequisite Undergraduate senior status in sociology, graduate standing, or permission of instructor. Advanced study of the current social science research and research methodology used in the study of sex and gender.

541 Survey Research (3:3:0). Prerequisite PSYC 300 or SOCI 221 or equivalent. 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). Prerequisite undergraduate senior status in sociology or graduate status. Course provides an opportunity to explore topics of contemporary interest in sociology. Topics will vary 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.

Spanish Courses (SPAN)

Foreign Languages and Literatures

Placement: See Admission Procedures.

100 Survival Spanish (3:3:0). Development of skills stressing vocabulary, pronunciation, and use of idiomatic expressions. Not part of sequence that fulfills foreign language requirement. May not be taken for credit by students who have previously earned any credit in Spanish. (Students with credit for SPAN 100 may take any Spanish course for credit for which they meet the prerequisite.)

101 Elementary Spanish (3:3:1). Designed for students with no knowledge of Spanish. Introduction to Spanish, including elements of grammar, vocabulary, oral skills, listening comprehension, and reading. Lab work required.

102 Elementary Spanish II (3:3:1). Prerequisite SPAN 101 or permission of department. Continuation of SPAN 101. Lab work required.

105 Review of Elementary Spanish (3:3:1). Prerequisite appropriate placement score or permission of department. Review of elements of Spanish for students who have studied Spanish previously. May not be taken for credit in combination with SPAN 101, 102 or 109. Lab work required.

109 Intensive Elementary Spanish (6:6:2). Equivalent to SPAN 101 and 102 taught in a single semester. Recommended for students who desire an intensive introduction to Spanish. May not be taken for credit in combination with SPAN 101, 102, or 105. Lab work required.

141, 142 Applied Spanish for the Social Services (4:4:2), (4:4:2). (Must be taken in sequence) Designed to meet the professional needs of majors in social service fields.

201 Intermediate Spanish I (3:3:1). Prerequisite SPAN 102, 105, or 109, appropriate placement score or permission of department. Further development of skills in listening, speaking, reading, and writing. SPAN 201 and 202 must be taken in sequence. Lab work required.

202 Intermediate Spanish II (3:3:1). Prerequisite SPAN 201, appropriate placement score, or permission of department. Application of skills to reading, composition and discussion. Lab work required.

209 Intensive Intermediate Spanish (6:6:2). Prerequisite SPAN 102, 105 or 109, appropriate placement score, or permission of department. Equivalent to SPAN 201 and 202, taught in a single semester. May not be taken for credit in combination with SPAN 201 or 202. Lab work required.

241 Applied Spanish for the Social Services (4:4:2). Prerequisite SPAN 142 or equivalent. Continuation of SPAN 142.

301 Advanced Grammar and Syntax (3:3:0). Prerequisite 12 hours of Spanish or permission of instructor. In-depth review of Spanish grammar and syntax. Extensive practice in controlled and free writing; emphasis on fundamental difficulties and points of interference which exist between English and Spanish.

311 Introduction to Hispanic Literary Analysis (3). Prerequisite 15 hours of Spanish or permission of instructor. This required course will prepare students for the study of Hispanic literature. It introduces basic terminology of literary analysis and provides practice in the examination of texts in the major genres: poetry, narrative, and drama.

317 The Literature of Spain (3:3:0). Prerequisite Spanish 311 or permission of instructor. Examination of the main periods, trends, genres, and most representative works of Spanish peninsular literature from the twelfth century to the present. Required for Spanish majors.

318 The Literature of Spanish America (3:3:0). Prerequisite Spanish 311 or permission of instructor. Development of Spanish-American literature: main authors, periods, and literary trends. Required for Spanish majors.

321 Introduction to Spanish Culture (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Designed for nonmajors. History, culture, economic and social development, scientific and artistic achievements that have contributed to the formation of modern Spain. Course work in English. Credit may be earned either in SPAN 321 or 361, but not in both.

322 Introduction to Latin American Culture (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Designed for nonmajors. History, culture, economic and social development, scientific and artistic achievements that have contributed to the formation of modern Latin America. Course work in English. Credit may be earned either in SPAN 322 or 366, but not in both.

323 Field Study in Hispanic Culture (1-3:6:0). Prerequisite 54 hours or permission of instructor. Study tour to an area of the Spanish-speaking world. Students must attend a series of lectures before the tour and must consult with the designated faculty member on a research project on a topic in Hispanic culture resulting in a paper or report.

324 Study Abroad in Spanish (3:3:0). Prerequisite SPAN 202 or 209 or equivalent, or permission of instructor. Study at an academic institution in a Spanish-speaking country including classroom studies with professors from the host country and field experiences.

325 Major Hispanic Writers (3:3:0). Prerequisite ENGL 101 or equivalent or permission of instructor. Designed for nonmajors. Study of the works of major Hispanic writers in translation. Writers studied vary. Course work in English. May be taken toward fulfillment of the general requirement in literature for baccalaureate degrees. May be repeated for credit with permission of department.

329 Special Topics in Spanish and Latin American Literature (3:3:0). Prerequisite ENGL 101 or permission of instructor. Designed for nonmajors. Course work in English. May be taken toward fulfillment of the humanities required in literature for the baccalaureate degree.

351 Spanish Conversation (3:3:0). Prerequisite 72 hours of Spanish or equivalent or permission of instructor. Development of oral expression on topics of current interest and everyday situations, including written assignments. Not open to native speakers.

352 Spanish Composition (3:3:0). Prerequisite 12 hours of Spanish or equivalent or permission of instructor. Development of ability in written expression on topics of current interest.

353 Spanish for the Business World (3:3:0). Prerequisite 12 hours of Spanish or permission of instructor. Introduction to
undergraduate Catalog 1988-1989

George Mason University
Statistics Courses (STAT)

Operations Research and Applied Statistics

250 Introductory Statistics (3:3:0). Prerequisite High school algebra is assumed. Elementary introduction to statistics with emphasis on applications and model formulation. Topics include descriptive statistics, sampling and sampling distributions, inference, correlation and regression, and survey sampling methods.

262 CS 262 Introduction to Computer Statistical Packages (3:3:0). Prerequisite CS 112 and a course in statistics. Use of computer packages in the statistical analysis of data. Topics include data entry, checking, and manipulation, as well as the use of computer statistical packages for regression and analysis of variance.

344 Applied Probability for Engineers and Scientists (3:3:0). Prerequisite MATH 114. An introduction to probability with applications to the computer, information, engineering, and physical sciences. Probability laws, discrete and continuous random variables, joint probability distributions, conditional distribution, independence, expectations, variable transformation, system reliability, sampling distributions.


354 Statistical Methods for Engineers and Scientists (3:3:0). Prerequisite STAT 344 or equivalent. Introduction to statistical methods with applications to the computer, information, engineering, and physical sciences. Descriptive statistics, point and interval estimation, tests of hypothesis, regression, analysis of variance, categorical data analysis, nonparametric inference. Quality control, acceptance sampling, and reliability analysis.

363 Introduction to Survey Sampling (3:3:0). Prerequisite 200-level course in probability or statistics. Introduction to the design and analysis of sample surveys. Sample designs covered include simple random sampling; systematic sampling; stratified, cluster, and multistage sampling. Analytical methods include sample size determination, ratio and regression estimation, imputation of missing data, nonsampling error adjustment. Applications are to the decision, information, and social sciences, and engineering. Class project will use a statistical computer package.

381 Introduction to Decision Theory and Research (3:3:0). Prerequisite STAT 250, DESC 202 or equivalent. Introduction to theory and research bearing on decisions made under uncertainty. Illustrations of the importance and interpretation of the uncertainty and value ingredients of choice are drawn from a number of contexts including business, medicine, law, and science. Topics include issues in the generation, assessment, and combination of these decision ingredients.

382 Introduction to Decision Analysis (3:3:0). Prerequisite STAT 381. Survey of alternate strategies for assisting persons who face complex inference and decision tasks. Major topics include structuring inference/decision tasks and various schemes for eliciting and combining decision ingredients. Students will be given experience in the analysis of decisions by means of case studies selected from different contexts.

455 Experimental Design (3:3:0). Prerequisite STAT 354 or DESC 353. Principles of analysis of variance and experimental design. Topics covered will include computer simulation and interpretation of analysis of variance; multiple comparisons; orthogonal contrasts; design of experiments including factorial hierarchical and split plot designs; principles of blocking and confounding in 2n experiments; estimation of variance components. Optional topics may include analysis of covariance, partial hierarchical designs, or incomplete block designs. Computer statistical packages will be used to perform computations.

457 Applied Nonparametric Statistics (3:3:0). Prerequisite STAT 354 or DESC 353 or equivalent. Introduction to nonparametric methods with applications to the decision and information sciences and operations analysis. Testing and estimation for one- and two-sample problems, independent and paired samples, location and dispersion problems, one- and two-way layouts, tests for independence, regression, discussion of efficiency.

Systems Engineering Courses (SYST)

Information Systems and Systems Engineering

301 Systems Methodology and Design I (3:3:0). Prerequisite ENGR 110, MATH 213. Morphologies and methodologies of systems engineering, systems design, design for functionality, information requirement determination. Overview of selected methods for formulation, analysis, and interpretation of systemic issues and design alternatives.

302 Systems Methodology and Design II (3:3:0). Prerequisite SYST 301. Systems life cycle, design for functionality, systems management, specification of system architecture, evaluation of alternatives, software systems engineering, operational test and evaluation.

390/ENGR 390 Engineering Economy (3:3:0). Prerequisite ENGR 107 and ENGR 205. Introduction to economic decision process in engineering design and analysis. Topics include methodology for selection of alternatives, measures of investment worth, income and cost evaluation, depreciation methods, benefit-cost and cost-effectiveness techniques, and applications of decision trees to capital investment.

430 System Organization, Design, and Development (3:3:0) Prerequisite SYST 401. Introduction to systems management that emphasizes information systems definition, organization, design, and development. Operational feasibility determination. Design for verification and validation. Case studies from software systems engineering.

431 Systems Engineering Laboratory I (2:1:3) Prerequisite SYST 401. Integrated discussions and laboratory exercises concerning the engineering of large systems. Experiments concerning information systems design, information requirements determination, systems level architecture specification, and operational test and evaluation.

451 Knowledge-Based Support Systems Design (3:3:0). Prerequisite SYST 301, OR 441, INF 315. Introduction to the design of expert systems and decision support systems.

470 Behavioral Factors in Systems Design (3:3:0). Prerequisite SYST 302, PSYC 305. Human information processing, inferential analysis, biases and heuristics in human information processing, support systems to aid in human information processing, human-system interaction, software systems engineering considerations.

490 Senior Design Project I (3:3:0). Corequisite SYST 451. The first portion of this lab includes familiarization with the knowledge support systems design lab software packages at GMU and individual experiments with these packages. The latter portion of the course concerns formulation of a design project.

495 Senior Design Project II (3:3:0). Prerequisite SYST 490. The design project plans formulated in SYST 490 are reviewed and modified. The systems design effort proposed is completed and a report prepared and evaluated. This is a "capstone" course in the systems engineering program. The primary goal is to produce a design and implementation software package to assist in the performance of a systems engineering function.

570 Quality Control Reliability, and Design for Functionality (3:3:0). Prerequisite Course in statistics. Systems engineering, statistical and managerial techniques applied to quality control and assurance reliability, and design for functionality. Topics include quality considerations in design, process versus design tolerances, acceptance sampling, control chart methodology, and applications. Software reliability and quality control.
Theatre Courses (THR)

Performing Arts

101 Introduction to the Theatre Experience (3:3:0). Overview of the theatre as the composite art of playwright, director, actor, designer, and technician; and an examination of the interrelationship of play, physical theatre, and audience through the study of representative plays of various periods of theatre history.

150 Script Analysis (3:3:0). Principles and practice of critical analysis of dramatic literature as preparation for production and performance. Study of dramatic structure, genre, poetic elements, and mythic traditions through the reading of critical material, analysis of selected scripts, and attendance at theatrical performances.

220 Acting I (3:3:0). Basic training in acting, emphasizing the actor’s use of voice and body in theatre games, improvisation, nonscripted situations, and short scenes.

222, 223 Voice for the Theatre I & II (3:3:0), (3:3:0). Prerequisite for 222 is 224. A two-semester course developing the voice as an effective instrument for stage characterization, with emphasis on voice production, flexibility, strength, and control.

224, 225 Movement for the Theatre I & II (3:3:0), (3:3:0). Prerequisite for 225 is 224. A two-semester course developing the body as an effective instrument for stage characterization, with emphasis on relaxation, physical sensitivity, alignment, and control.

230, 231 (230, 245) Introduction to Theatre Technology I & II (4:3:3), (4:3:3). Two-semester sequence presenting the fundamentals of theatre organization and technology. Reviews basic theatre practice and techniques used in stage carpentry, rigging, painting, special effects, lighting, sound, properties, costumes and technical management. Participation in Theatre Division productions is required.

239 Stage Management (3:3:0). Prerequisite Permission of instructor. Lecture and lab in theories, techniques, and problem-solving skills necessary for stage management of plays and other performing arts events.

240 Stage Makeup (3:3:0). Lecture and lab in theories, principles, and practice of stage makeup.

270 Theatre Criticism (3:3:0). Basic understanding of how the elements of theatre work together, to facilitate critical appraisals of theatre productions and to enhance enjoyment of the theatre experience. Attendance at productions; discussion and evaluations of productions; professional reviews of productions; the writing of reviews.

302 Scripts in Performance (3:3:0). Designed for nonmajors. Emphasis on awareness and understanding of the process. Attendance at productions and rehearsals; interviews with directors, actors, designers and playwrights. Especially appropriate for students in literature who want or need additional work in how that literature becomes performance.

320 Play Production Practicum (1-2:0:0). Prerequisite Permission of instructor. Study and practice of acting and directing through rehearsal and public performance. Approximately 45 hours of rehearsal and performance per credit hour. Graded S-NC only. May be repeated for a maximum of six hours credit.

325 Acting II (3:3:0). Prerequisite THR 150, 220, or permission of instructor. Advanced lab-performance course given to acting theory and styles. Readings in Delsarte, Dolman, Stanislavski, Brecht, Artaud, Spolin, Chaikin, and Groetzki. Application of theories to the playing of selected scenes. Development of a personal approach to acting through experimentation.

326 Acting III (3:3:0). Prerequisite THR 325 or permission of instructor. Advanced lab-performance course given to acting theory and styles. Readings in Delsarte, Dolman, Stanislavski, Brecht, Artaud, Spolin, Chaikin, and Groetzki. Application of theories to the playing of selected scenes. Development of a personal approach to acting through experimentation.

328 Special Topics in Performance (3:3:0). Prerequisite THR 220, 325, and 326, or permission of instructor. Specialized study of a particular aspect of performance. Topics may include stage combat, mime, dialects, mask work, improvisation, etc. Course may be repeated up to four times provided the suffix (specific course content) is different each time.

330 Scene Design (3:3:0). Prerequisite THR 150, 230, 231, and 232, or permission of instructor. Basic scene design and scenographic drawing. Analysis of a script for visual interpretation; the devising of a stage setting that will accommodate movement, dramatic action, character, and mood. The drafting of floor plan, builder’s and painter’s elevations. Experience with perspective drawing, color renderings, and scale models.

331 Scene Design Studio (3:0:3). Prerequisite THR 330 or permission of instructor. Intermediate level lecture. Lab in scene design and scenographic drawing. Emphasis on creation of workable visual metaphors, communication of design ideas, experience with perspective and mechanical drawing, color rendering, and scale models.

332 (231) Stage Lighting Design (3:3:0). Prerequisite THR 150, 230, and 232, or permission of instructor. Fundamentals of stage lighting design. Knowledge of tools, equipment, and techniques of stage lighting and an introduction to lighting design process. Includes terminology, basic electricity, design theories, projections, and specialized drafting techniques.

333 Lighting Design Studio (3:0:3). Prerequisite THR 332 or permission of instructor. Intermediate-level lecture. Lab in lighting design with concentration on light as an artistic medium, creation of workable lighting metaphors, and communication of ideas.

336 Advanced Theatre Technology (3:3:0). Prerequisite THR 150, 230, 231, 330, or permission of instructor. Technical theatre beyond the introductory level. In-depth examination of specialized materials and techniques, unusual stage machinery, safety practices, theatre sound, personnel management, and technical direction.

340 Play Production Practicum (1-2:0:0). Prerequisite permission of instructor. Study and practice of theatre production techniques through rehearsal and performance. 45 hours of production work per credit hour. Graded S-NC only and can be counted toward total needed for degree. May be repeated for a maximum of six credits.

341 Costume Design (3:3:0). Prerequisite THR 150, 230, 231, 232, or permission of instructor. Lecture-lab in fundamentals of costume design for the stage. Costume is studied in relation to historical periods and the artistic demands of scripts.

342 Costume Design Studio (3:0:3). Prerequisite THR 341 or permission of instructor. An intermediate-level lecture-lab course in costume design, with emphasis on visual metaphors, communication of design ideas, color rendering, and material selection.

351, 352 Survey of Theatre History (3:3:0), (3:3:0). Prerequisite for 351 is 150 or permission of instructor. For 352 is 351 or permission of instructor. Development of the theatre from its beginnings to the present, with reference to theatrical movements, playwrights, producers, directors, designers, actors. Emphasis on social, cultural, and philosophical factors shaping the theatre in successive historical periods.

358 Non-Western Theatre (3:3:0). Prerequisite THR 150 or permission of instructor. Literature, theory, and practice of selected non-Western theatrical genres.

360 Directing I: Basic Concepts (3:3:0). Prerequisite THR 150, 226, 230, 231, and 232, or permission of instructor. Basic concepts and techniques of directing for the stage. Emphasis on close textual analysis of script for use of space, characterization, tempo, and mood. Attention to reading ground plans, audition and rehearsal procedures, integrating production elements, and the historical evolution of the director. Practice in blocking, line reading, staging short scenes.

361 Directing II: Practicum (3:0:3). Prerequisite THR 360 or permission of instructor. A lab course intended to complement Directing I, providing extensive application of basic concepts, culminating in production for public performance.

374 Creative Dramatics and Oral Interpretation in the Elementary School (3:3:0). Investigation and practice in effective communication in creative dramatics and oral interpretation of children's literature. Emphasis on didactic development in these areas. Students who have taken LAC 355 or 361 cannot take this course.
Course Descriptions

376 Puppets, Plays and Poems: Theatre Techniques for Children and Young People (3:3:0). Prerequisite permission of instructor. Experiences in theatre techniques and activities such as storytelling, puppetry, improvisation, theatre games, the uses of fantasy and creative movement; the application of these techniques in work with children and young people. Each student designs a project related to specific needs and background. Although this course may be taken by majors as an elective, it is designed primarily for nonmajors, especially students who plan to work with children and young people or who are already working with them.

380 Playwriting Workshop (3:0-3). Prerequisite 12 hours of English or permission of instructor. A practical workshop in writing plays, with emphasis on the one-act form. May be repeated once, but only three hours are accepted in the theatre major.

385 Special Topics in Dramtic Theory, Criticism and History (3:3:0). Prerequisite THR 150 or permission of instructor. Specialized study of a particular problem or period in theatre history or dramatic theory and criticism. Topics may include history of black theatre, American musical theatre, genre, structuralism and theatre, etc. Course may be repeated up to four times provided the suffix citing specific course content is different in each case.

420, 421 Acting Styles I & II (3:0-3), (3:0-3). Prerequisite THR 223, 225, 326, or permission of instructor. Should be taken after or simultaneously with 351, 352. A two-semester advanced, lab-performance course given to the intensive study of acting period styles from Greek tragedy to the present.

422, 423 Acting Problems (3:0-3), (3:0-3). Prerequisite 54 hours, acceptance into the B.F.A. program, permission of instructor and of the theatre faculty. An advanced lab-performance course given to in-depth individual or group research into specialized areas of acting theory and/or style.

430, 431 Design Problems (3:0-3), (3:0-3). Prerequisite 54 hours, permission of instructor and permission of the theatre faculty. Advanced course in specialized areas of theatrical scenery design, lighting design, design history, or costume design.

435 History of Scene Design (3:3:0). Prerequisite THR 351, 352 or permission of instructor. Study of the philosophy and practice of theatrical design from Classical Greece to the present with special emphasis on contemporary scenic solutions.

439 Performing Arts Management (3:3:0). Prerequisite 54 hours or permission of instructor. Introduction to the economic and administrative aspects of a performing arts organization.

445 Costume History and Construction (3:3:0). Prerequisite THR 341 or permission of instructor. Survey of the history of fashion from Classical Greece to the present day, including basic methods of constructing period costumes. Participation in theatre division productions is required.

460, 481 Directing Problems (3:0-3), (3:0-3). Prerequisite 54 hours, permission of instructor, and permission of the theatre faculty. Advanced directing intended to complement Directing I and Directing II. Extensive applications of concepts in productions for public performance. The directing of two or more short plays or long play.

480 Seminar in the Shapers of Modern Theatre (3:3:0). Prerequisite 351 and 352 or permission of instructor. While specific course content may vary, the seminar will deal with fundamental questions about the nature of theatre; the modes of theatrical production; the standards by which drama is judged; the relationship between performance, text, and audience; theatre as a unique form of knowledge, expertise, and thought; and the theatre's place within the liberal arts curriculum. These are raised through intensive study of ideas and practices of directors, designers, playwrights, and theorists who have significantly influenced modern Western theatre.

494 Field Experience (3:0-0). Prerequisite 54 hours, permission of instructor and permission of the theatre faculty. An off-campus experience with educational community or professional theatre to provide the student with an opportunity to apply classroom training, knowledge, skills, and theory to an actual situation.

497, 498 Independent Study (3:0-0). Prerequisite Open only to theatre majors with 84 hours and by special permission of chair.

Individual research or a creative project in close consultation with instructor. Selection from projects in performance, directing, technical theatre and design, or theatre history and criticism.

University Courses (UNIV)

Academic Affairs

300 Robinson Fellow Seminar (3:3:0). Prerequisite Permission of instructor. Independent study seminar offered by a Robinson Fellow. Topic will vary. May be taken for credit more than once. Offered spring 1986, Professor R. P. Clark; spring 1986, Professor J. A. Siccone; spring 1987, Professor R. J. Stillman; spring 1988, Professor R. L. Nadeau.

301 Great Ideas in Science (3:3:0). A nontechnical introduction to the ideas that have shaped the growth of science from the building of Stonehenge to the modern theories of the Big Bang. The idea behind each major advance is treated in its historical context, with special attention to its importance in mankind's understanding of the nature of the universe. Examples are taken from the physical, geological, and biological sciences. The course is intended for non-science majors and uses little mathematics. Offered fall 1987 and spring 1988. Robinson Professor J. S. Trefil.

420 Nuclear War (3:3:0). Thinking about the unthinkable — an objective nonideological examination of topics related to this most important issue now facing mankind, including effects of nuclear war; likelihood of nuclear war; politics, strategy, and morality of nuclear war and nuclear weapons; weapons systems now and in the future; nuclear proliferation; arms-control agreements. Every attempt is made to treat the material in a nonideological way. Nevertheless, ample opportunity is provided for informed exchanges of views. Professor R. Ehrlich.

431 Generic Design (3:3:0). Prerequisite MATH 110 or any 3-credit course in COMM, PHIL, PSYC, or SOCI or permission of instructor. Philosophy, laws, principles, and practice of design by the individual designer and by design groups, using methodology that is discipline independent. Intended to prepare students to use specialized knowledge to synthesize products, processes, organizations, legislation, literary works, and other consequences of human creativity. Professor J. N. Warfield.

434 Interracial and Interracial Conflict: World Perspectives (3:3:0). Demographic purview of the diversity of racial and ethnic groups in North America, South America, Europe, Africa, and the Orient; nature and meaning of race and of ethnic group; factors causing racial and ethnic conflict and resultant social inequalities; reactions to social inequalities; programs, methods, social movements, and social philosophies to reduce interracial and interethnic conflict. Professor J. B. Gitter.

435 Business Law Technology: Analysis of Modern Social Organization (3:3:0). This interdisciplinary course explores the changes in society both affect and are affected by forms of social organization. Professor T. R. Burns.

436 The Development Process: Cities from Fields (3:3:0). Interdisciplinary examination of the process of urban development from conception to community. The interrelationship of physical, social, economic, and public planning in large-scale developments and planned communities is explored through presentations by distinguished practitioners, classroom instruction, and first-hand observation of local development projects. Professor L. E. Horton.

437 Approaches to Problem Solving (3:3:0). Course goal is to improve students' analytical thinking and problem-solving skills. Students are introduced to, and guided in applying, models of problem solving. Situations are chosen to provide applications relevant to students' lives and courses of study. Professor A. M. Taylor.

438 Literature and Society: The Caribbean Archipelago (3:3:0). Usually studied in isolation from each other, the writers of the Hispanic, Anglophone, and Francophone Antilles, legates of a common history, share several primary, defining preoccupations. This course aims to examine their work, regarded as distinct facets of an interrelated whole, as it also reflects the presence of a more broadly encompassing Caribbean culture that coheres beyond the boundaries of language, imperial "spheres of influence," and geography. Robinson Professor R. Marquez.
439 Tradeoffs (3:3:0). Wise use of public resources requires informed observers and decision makers who act out of concern for the general well-being of the public. A number of important areas where very different courses of action are available require difficult decisions involving tradeoffs. Tradeoffs are made in recognition of the finite resources available, and one good may be taken up at the expense of another good, or a lesser evil may be chosen instead of a greater evil. This course explores the general social situation wherein numerous critical issues arise, the kinds of tradeoffs that are involved, methods for making such tradeoffs, and the assessment and wise use of the information base that provides knowledge about tradeoffs. Offered spring 1988. Professor J. N. Warfield.

440 Cultural Tradition and Political Event in Latin America (3:3:0) Political events in Latin America are generally presented in the United States without the appropriate connection to the cultural and historical context. Yet the relationship between cultural tradition and political event in Latin America is such that attempting to grasp the latter in absence of the former leads to mistaken policies. When these fail, sometimes the voice of the cultural critic is at last heard. The aim of these lectures is to exercise criticism — of the culture and of the politics of Latin America — as a contribution to an overriding concern shared by many Latin and North Americans: How to reconstruct inter-American relations between now and the twenty-first century. The solution, of course, is pluralistic, but is intimately related to the subject of bringing the humanities to bear on public policy. Offered spring 1988. Professor Carlos Fuentes.

Vietnamese Courses (VIET)

301, 302 Vietnamese Culture and Civilization (3:3:0), (3:3:0). Prerequisite 54 hours or permission of instructor. Survey of Vietnamese culture and civilization, including language, philosophy, religion and family life and discussion of the problems of cross-cultural understanding. Course work in English. May be taken toward fulfillment of the non-western culture requirement for B.A. Degree.

361, 362 Vietnamese Literature (3:3:0), (3:3:0). Prerequisite Knowledge of Vietnamese. Survey of Vietnamese literature from the Early Period to the twentieth century. Study of the vernacular genres of verse and prose in Vietnam. May be taken toward fulfillment of the Humanities requirement in literature. For non-western credit.
General Policies
General Policies

Conduct

The University respects and protects the individual dignity, integrity, and reputation of its students. Students are required to comply with the 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 and Dean 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 under Academic Policies, 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 and Dean for Student Services, located in Room 302 of Student Union I (323-2522).

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 Education Rights and Privacy Act may be referred to the Office of the Registrar.

Statement on Drugs and Alcohol

The abuse of drugs and alcohol by members of the George Mason University community is incompatible with the goals of the University. By defining standards of behavior and by providing educational programs to create an awareness of drug and alcohol-related problems, the University attempts to prepare individuals to act responsibly. Those in need of assistance in dealing with such problems are encouraged to seek the confidential services of the University's counseling center or the student health service.

Drugs. The University prohibits the possession and use of illegal drugs. Possession, sale, use, or distribution of controlled substances, including marijuana, is a violation of both federal and state laws and University regulations.

Alcohol. The use of alcoholic beverages on campus is at the discretion of the University and is subject to state alcoholic beverage regulations. Unless the University has specifically sanctioned the location and condition of alcohol use, the possession and consumption of alcohol on campus is prohibited.

Individuals involved in the sale, use, or distribution of controlled substances (drugs and alcohol) are subject to arrest and University disciplinary action. The University imposes a variety of sanctions, which include eviction from University housing and suspension or dismissal from the University.

Adopted by the Board of Visitors on May 12, 1987.

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 conformity 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. A state vehicle registration card must be provided at the time of registration. Vehicular
registration decals may be purchased for the full academic year or by the semester or summer session.

The Traffic and Parking Office is at the rear of the West Building in T-102, and in Student Union I, second floor, old Patriots Locker.

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

See Motor Vehicle Fees in the Tuition, Fees, and Financial Aid section for decal fees.

Other Regulations

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).

Smoking

Smoking is not permitted in classrooms, lecture halls, theaters, or in the University libraries. Lounge areas in the student union buildings and other University buildings have been set aside for this purpose.

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 near Buildings 2, 4, and 8. Bikes may be parked only in these areas.

Bikes and skateboards are not permitted on sidewalks, ramps, footpaths, 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 without prior approval of the Business and Finance Office.
Administration and Faculty

Board of Visitors

The Rector and Visitors

Hector Alcalde, Rector, Arlington, VA
Val S. McWhorter, Vice Rector, Springfield, VA
Robert P. Crouch, Jr., Secretary, Charlottesville, VA
C. Douglas Adams, Burke, VA
Gayle Perkins Atkins, Alexandria, VA
Richard A. Barton, Arlington, VA
Randolph W. Church, Jr., Fairfax, VA
Pamela Tribino, Student Representative, Fairfax, VA
Myron P. Erkiletian, Alexandria, VA
Joseph A. Heastie, Vienna, VA
Nancy M. Hirst, McLean, VA
Henry O. Lampe, Arlington, VA
Helen Hill Miller, Washington, DC
Charles H. Nance, Alexandria, VA
Martha V. Pennino, Vienna, VA
Edgar A. Prichard, Fairfax, VA
Elizabeth T. Walker, Alexandria, VA

Membership of the Board of Visitors is as of July 1987.

Administration

Office of the President

George W. Johnson, Ph.D., President
David L. Potter, Ph.D., Executive Assistant to the President
Lloyd M. DeBoer, Ph.D., Special Assistant to the President for Community Relations
Joseph L. Fisher, Ph.D., Special Assistant to the President

Office of the Senior Vice President

J. Wade Gilley, Ph.D., Senior Vice President
Frank L. Matthews, J.D., Assistant Senior Vice President, Affirmative Action Officer
Kenneth A. Fulmer, Ph.D., Assistant Senior Vice President, Governmental Affairs
Robert F. Cozzens, Ph.D., Deputy Director, Institute of Science and Technology at George Mason University

University Computing and Information Systems
Frederick H. Siff, Ph.D., Associate Senior Vice President
Edward D. Heath, M.S., Director, Academic Computing Services
Jerry H. Jenkins, M.S., Director, Administrative Information Systems

Design and Publications Services
Dan Skripkar, B.S., Director

Public Relations
Helen J. Ackerman, M.A., Assistant Vice President for Public Relations

Office of the Vice President for Academic Affairs

David J. King, Ph.D., Vice President
James J. Fletcher, Ph.D., Assistant Vice President and Dean for Undergraduate Studies
Steven J. Diner, Ph.D., Vice Provost for Academic Programs
Suzanne Swope, Ph.D., Vice Provost for Academic Support Administration
Madelaine Marquez, Ed.D., Assistant to the Vice President for Academic Affairs

College of Arts and Sciences
Paula Gilbert Lewis, Ph.D., Acting Associate Dean
Michael R. Gabel, Ph.D., Acting Associate Dean
Mary Kay Cabell, Ph.D., Assistant Dean for Student Affairs
Thomas H. Hill, D.M.A., Assistant Dean for Student Affairs
College of Education and Human Services  
Larry S. Bowen, Ph.D., Dean  
Betty J. Schuchman, Ph.D., Assistant Dean  

School of Business Administration  
Coleman Raphael, Ph.D., Dean  
Richard L. Coffinberger, J.D., Associate Dean for Academic Programs  
John W. O'Malley, M.B.A, Associate Dean for External Programs  
James V. Fare, M.S., Assistant to the Dean  
Penny Webb, M.A., Pre-business Counselor  

School of Information Technology and Engineering  
Andrew P. Sage, Ph.D., Dean  
James D. Palmer, Ph.D., Associate Dean  

School of Law  
Henry G. Manne, J.S.D., Dean  
Steven J. Eagle, J.D., Associate Dean for Academic Affairs  
Charles R. Engle, J.D., Associate Dean for Administration  
Marc Hobberman, B.S., Assistant Dean  

School of Nursing  
Rita M. Carty, D.N.Sc., Dean  
Catherine Connelly, D.N.Sc., Associate Dean for Graduate Programs  
Brenda Cherry, Ph.D., Director of Undergraduate Programs  
Georgine Redmond, M.S.N., Assistant Dean for Student Affairs  

Graduate School  
Charles K. Rowley, Ph.D., Dean  
James W. Fonseca, Ph.D., Associate Dean  

Division of Continuing Education  
Robert T. Hawkess, Jr., Ph.D., Dean  
Sally J. Reithlingshofer, M.A., Assistant Director  
T. Daniel Shumate, Ph.D., Assistant to the Dean  
Catherine M. Hoover, M.A.Ed., Business Manager  
Kathleen McGuinness, M.S., Acting Director of Individualized Study Degree Programs  
Donna R. Balundo, M.Ed., Director of the Summer Session  
Eugene M. Donnelly, M.A., Coordinator of Off-Campus Instruction  
Karen C. Cohn, B.A., Assistant Coordinator of Off-Campus Instruction  
Novella Wilson, M.Ed., Coordinator of the Extended Studies Enrollment Program  
Edward V. Jones, Ph.D., Coordinator of In-Service Education  
Virginia A. Millonig, Ph.D., Coordinator of Nursing Continuing Education  
Nancy D. Joyner, Ph.D., Coordinator of Community Services  
Barbara S. Framer, M.A., Assistant Coordinator of Community Services  

Academic Advising Center  
Sara C. Looney, Ph.D., Director  
Karelo Mackalp, M.Ed., Associate Director  
Paul Bousel, M.A., Assistant Director  

Admissions  
Patricia M. Riordan, M.Ed., Director  
George J. Gangloff, M.S., Senior Associate Director  
Phyllis J. Pecorak, B.A., Associate Director  
Alene Smith, M.Ed., Associate Director  

Career Services  
Patricia J. Carretta, M.A., Director  
Janice L. Suter, M.A., Associate Director  
Cynthia Sedgwick, B.A., Assistant Director for Employer Relations and Placement  
Victoria H. Robinson, M.Ed., Assistant Director, Cooperative Education  
Bevry Stennett, M.A., Coordinator of Career and Educational Resource Center  
E. Christine Smith, M.Ed., Career Counseling  
Donna M. Backer, M.Ed., Coordinator, Cooperative Education  
Pamela Binninger, M.Ed., Coordinator Cooperative Education  
Virginia Wheeler, M.A., Career Counselor  

Charles Rogers Fenwick Library  
Charlene S. Hurt, M.L.S., Director  
Jamie Wright Congiligo, M.L.S., Associate Librarian for Public Services  

Counseling  
Ralph K. Roberts, Ph.D., Director  
Charlotte Stannard, M.Ed., Counselor and Coordinator of Re-Entry Program  
Dennis W. Webster, Ph.D., Assistant Director  
Gail Bruce-Sanford, Ph.D., Coordinator of Black Peer Counseling Services  
Adrienne M. Barna, Ph.D., Counselor and Coordinator of Training and Groups  
G. Diane Knight, Ph.D., Counselor, Learning Skills, and Coordinator of Tutorial Services  
Suzanne Oakley, Ed.D., Counselor  

International Programs and Services  
France J. Pruitt, Ph.D., Director  

Minority Student Retention Program  
Charles Nathaniel Smith, M.S., Coordinator  

Minority Student Services  
Judy Pelham, Ph.D., Director  

Office of Research  
Michael T. Fish, M.A., Director  
Sandra W. Mathews, M.A., Assistant Director  

Registrar  
Michael J. McDermott, Jr., Ph.L., Registrar  
James G. Gallemore, M.S., Associate Registrar  

Student Aid  
Rita M. Bodie, M.S., Director  
Gary A. Spoles, M.A., Coordinator of Financial Aid  
Aileen L. Ferguson, B.S., Financial Aid Counselor  
Carol A. Elstad, Coordinator of Veterans Services  
Jeanne Ellis, B.A., Financial Aid Counselor  

Office of the Executive Vice President for Finance and Planning  
Maurice W. Scherrens, J.D., Executive Vice President for Finance and Planning  
Andrew K. Soll, M.B.A., Assistant Vice President Planning and Budget  
Lawrence D. Czarda, M.P.A., Assistant Vice President for Business Services  
Edward Delaney, Ph.D., Assistant Vice President for Institutional Planning and Research  

http://catalog.gmu.edu
<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Title/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller</td>
<td>Hope A. Williams</td>
<td>Controller</td>
</tr>
<tr>
<td>Internal Audit</td>
<td>Julia H. Boyd, M.S., C.P.A., C.I.A.</td>
<td>Director</td>
</tr>
<tr>
<td>Purchasing</td>
<td>Susan L. Fitzgerald</td>
<td>Agent</td>
</tr>
<tr>
<td>Office of the Executive Vice President for Administration</td>
<td>Donald J. Mash, Ph.D.</td>
<td>Executive Vice President</td>
</tr>
<tr>
<td>Alumni Relations</td>
<td>Joseph D'Agostino, Ph.D.</td>
<td>Director</td>
</tr>
<tr>
<td>Athletics and Recreation Sports</td>
<td>Jack Kvancz, B.A.</td>
<td>Director</td>
</tr>
<tr>
<td></td>
<td>Jay W. Marsh, B.S.</td>
<td>Associate Director of Athletics</td>
</tr>
<tr>
<td></td>
<td>Susan A. Collins, M.S.</td>
<td>Assistant Director of Athletics</td>
</tr>
<tr>
<td></td>
<td>John Mitchell, B.A.</td>
<td>Assistant Director for Athletic Facilities</td>
</tr>
<tr>
<td></td>
<td>Carl L. Sell, Jr.</td>
<td>Sports Information</td>
</tr>
<tr>
<td>Facilities</td>
<td>Reid Herlihy, M.S.</td>
<td>Vice President</td>
</tr>
<tr>
<td></td>
<td>L. E. McMenamin, M.S.</td>
<td>Director of Physical Plant</td>
</tr>
<tr>
<td></td>
<td>William O. Brunkhorst, B.B.A.</td>
<td>Assistant Director of Physical Plant</td>
</tr>
<tr>
<td></td>
<td>Charles R. Wagner, B.A.</td>
<td>Director of Facilities Planning</td>
</tr>
<tr>
<td></td>
<td>John E. Gresock, M.C.R.P.</td>
<td>Assistant Director of Facilities Planning</td>
</tr>
<tr>
<td>Student Services</td>
<td>Kenneth E. Bumgarner, M.A.</td>
<td>Associate Vice President and Dean for Student Services</td>
</tr>
<tr>
<td></td>
<td>John L. Spaldo, M.A.</td>
<td>Associate Dean for Student Services and Director of Student Services Facilities</td>
</tr>
<tr>
<td></td>
<td>Girard M. Mulherin, Licentiate</td>
<td>Associate Dean for Student Services and Director of Housing and Residential Life</td>
</tr>
<tr>
<td></td>
<td>James Carley, M.Ed.</td>
<td>Associate Director of Housing and Residential Life</td>
</tr>
<tr>
<td></td>
<td>Peter Galloway, M.B.A.</td>
<td>Business Manager, Housing and Residential Life</td>
</tr>
<tr>
<td></td>
<td>Bonnie Hankins, Assistant Director of Housing and Residential Life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kenneth E. Kelly, Ed.D.</td>
<td>Associate Dean for Student Services and Director of Student Activities</td>
</tr>
<tr>
<td></td>
<td>Don H. Rosenblum, M.A.</td>
<td>Assistant Director of Student Activities</td>
</tr>
<tr>
<td></td>
<td>Lon Tiller, M.S.</td>
<td>Assistant Director of Student Activities</td>
</tr>
<tr>
<td></td>
<td>Adrienne Hillery, M.Ed.</td>
<td>Assistant Director of Student Activities</td>
</tr>
<tr>
<td></td>
<td>Carol J. Sudol, R.N.</td>
<td>Director of Student Health Services</td>
</tr>
<tr>
<td></td>
<td>Kathy Balasko, M.S.</td>
<td>Health Educator, Student Health Services</td>
</tr>
<tr>
<td>University Activities</td>
<td>Dorcas Goodwin Deaneer, M.Ed.,</td>
<td>Director</td>
</tr>
<tr>
<td>University Police</td>
<td>Arthur Jr. Sanders, M.A.</td>
<td>Chief</td>
</tr>
<tr>
<td></td>
<td>Paul F. Malherek, B.A.</td>
<td>Commander, Administrative Bureau</td>
</tr>
<tr>
<td></td>
<td>John D. Jenkins, Commander</td>
<td>Commander, Operations Bureau</td>
</tr>
<tr>
<td></td>
<td>Bedford H. Thomas, Commander</td>
<td>Services Bureau</td>
</tr>
<tr>
<td></td>
<td>Walter T. Barrett, Commander</td>
<td>Support Bureau</td>
</tr>
<tr>
<td></td>
<td>David A. Kapalko, B.S.</td>
<td>Commander, Access and Information Bureau</td>
</tr>
<tr>
<td>Office of University Development</td>
<td>Elizabeth Carlson Dahlin, M.A.</td>
<td>Vice President for University Development</td>
</tr>
<tr>
<td></td>
<td>Katherine Perry, M.L.I.S.</td>
<td>Director of University Development and the Annual Fund</td>
</tr>
<tr>
<td></td>
<td>Margaret D. Rice, M.B.A.</td>
<td>Assistant Director and Business Manager</td>
</tr>
<tr>
<td></td>
<td>Jane Pearson, B.A.</td>
<td>Mathy House Information Officer</td>
</tr>
<tr>
<td></td>
<td>Betty Nathan, M.S.L.S.</td>
<td>Assistant Director of Development for Research and Special Projects</td>
</tr>
<tr>
<td></td>
<td>Mark E. Embridge, B.A.</td>
<td>Assistant Director of University Development</td>
</tr>
<tr>
<td></td>
<td>M. Dabney Oakley, Jr.</td>
<td>Development Officer, School of Law</td>
</tr>
<tr>
<td></td>
<td>Heather Isaak, B.S.</td>
<td>Assistant to the Director</td>
</tr>
</tbody>
</table>

http://catalog.gmu.edu
Faculty

Emeritus Faculty

Brown-Azarowicz, Marjory, B.A., M.A., Ph.D., Emeritus Professor of Education.
Evelyn Edith Coehlen, B.S., M.S., Ed.D., Emeritus Professor of Nursing.
Lloyd Martin DeBoer, B.S., M.B.A., Ph.D., Emeritus Dean of the School of Business Administration.
Stephen T. Early, B.A., M.A., Ph.D., Emeritus Professor of Government and Politics.
James Louis Jackson, B.A., M.A., Ph.D., Emeritus Professor of English.
Emelia-Louise Kilby, B.S., M.A., Ph.D., Emeritus Professor of Health and Physical Education.
Robert Charles Krug, B.S., M.S., Ph.D., Emeritus Professor of Chemistry.
William H. McFarlane, B.A., Ph.D., Emeritus Professor of Philosophy.
Ralph Norvell, B.A., J.D., LL.M., Emeritus Dean of the School of Law.
Conrad D. Philos, A.B., J.D., Emeritus Professor of Law.
Clayton M. Schindler, A.B., M.S., Ph.D., Emeritus Dean of College of Professional Studies.
William P. Snively, B.A., M.A., Ph.D., Emeritus Professor of Economics.
Lorin Andrew Thompson, B.A., M.S., Ph.D., President Emeritus.

Faculty 1987-88

The faculty list below covers the 1987-88 academic year, and reflects appointments as of the end of the fall 1987 semester.

Ackerman, Helen J., Assistant Vice President for Public Relations. B.A. 1968, University of Western Australia; M.A. 1986, George Mason University.

Ackerman, Stephen, Lecturer in English. A.B. 1970, Boston College; M.A. 1972, Ph.D. 1975, University of Virginia.

Acquah, James B., Assistant Professor of Computer Science. B.S., M.A. 1979, Cambridge University; Ph.D. 1986, George Washington University.

Adamskiwicz, Susan Laura, Assistant Professor of Biology. A.B. 1962, Stanford University; Ph.D. 1968, University of Virginia.


Aghbar, Ali-Asgar, English Language Institute, B.A. 1969, University of Mashad; M.A. 1972, Kent State University; M.S. 1979, Ph.D. 1981, Georgetown University.


Ahmadi, Shariq, Instructor of Mathematics. B.S. 1981, West Virginia Institute of Technology; M.S. 1984, West Virginia University.


Akwule, Raymond U., Assistant Professor of Communication. B.A. 1967, M.A. 1979, University of Iowa.

Albanese, Denise, Assistant Professor of English. B.A. 1978, New York University; Ph.D. 1987, Stanford University.

Alexander, Benjamin B., Lecturer in English. B.A. 1971, University of the South; M.A. 1976, Ph.D. 1979, University of Dallas.


Alexeev, Michael, Assistant Professor of Economics. Ph.D. 1984, Duke University.

Allen, John Ashley, Associate Professor of Psychology. A.B. 1963, Duke University; M.S. 1969, Ph.D. 1971, North Carolina State University.

Allen, Mary, Lecturer in English. B.A. 1962, M.A. 1963, Brigham Young University; Ph.D. 1973, University of Maryland.


Ambler, John Alden, Lecturer in Computer Science. B.S., M.E. 1968, University of South Florida; M.S. 1970, University of Southern California; M.B.A. 1971, Golden State University.


Anderson, Karl Eric, Adjunct Associate Professor of Geography. B.S. 1967, Purdue University; M.S. 1969, Northwestern University; Ph.D. 1978, Northwestern University.

Anderson, Mark Randolph, Instructor; Assistant Men's Basketball Coach. B.S. 1976, University of Missouri.


Anderson, Wayne F., Distinguished Professor of Public Administration. B.S. 1948, M.S. 1949, University of Wisconsin, Madison.


Andriole, Stephen J., Professor of Information Systems and Systems Engineering; Chair, Department of Information Systems and Systems Engineering. B.S. 1971, La Salle College; M.S. 1973, Ph.D. 1974, University of Maryland.

Andrykovitch, George Eugene, Associate Professor of Biology. B.S. 1962, M.S. 1965, University of Pittsburgh; Ph.D. 1968, University of Maryland.


Anthony, Robert A., Professor of Law. B.A. 1953, Yale University; B.A. Juris. 1955, Oxford University; J.D. 1975, Stanford University.


Athale, Ravindra Anant, Lecturer in Engineering. B.Sc. 1972, Bombay University; M.Sc. 1974, Indian Institute of Technology; Ph.D. 1980, University of California at San Diego.

Aulett, Richard J., Assistant Professor of Electrical and Computer Engineering. Ph.D. 1987, University of Virginia.

Avruch, Kevin Andrew, Associate Professor of Anthropology. B.A. 1972, University of Chicago; M.A. 1973, Ph.D. 1978, University of California at San Diego.
Bafundo, Donna R., Assistant Professor; Director of Summer Evening Sessions, Consortium Administrator. B.A. 1966, Trinity College; M.Ed. 1978, George Mason University.


Bakhash, Shaul, Robinson Professor B.A. 1959, M.A. 1968, Harvard University; D.Phil. 1972, Oxford University.

Ballas, James A., Research Assistant Professor of Psychology. B.A. 1969, University of Montana; M.S. 1974, Montana State University; Ph.D. 1980, The Catholic University of America.

Banks, Richard C., Adjunct Professor of Biology. B.S. 1953, Ohio State University; M.A. 1958, Ph.D. 1961, University of California at Berkeley.

Baraniecki, Anna, Assistant Professor of Engineering. M.Sc. 1970, Warsaw Technical University, Poland; Ph.D. 1980, University of Windsor, Canada.

Barna, Adrienne M., Assistant Professor; Counselor, Counseling Center. A.B. 1970, Drew University; Ed.M. 1972, Rutgers University; M.A. 1976, Ph.D. 1980, University of New York.

Barnes, Jeanne, Lecturer in English. B.A. 1971, South Dakota State University; M.A. 1986, University of Nebraska.

Barnes, Richard Dale, Assistant Professor; Assistant Men's Basketball Coach. B.A. 1977, Lenoir-Rhyne College.

Barocas, Ralph, Professor of Psychology. B.A. 1957, Hunter College; M.S. 1960, Ph.D. 1964, Pennsylvania State University.

Barrett, Carolyn, Lecturer in English. B.A. 1962, University of Portland; M.A. 1966, University of Southern California; Ph.D. 1980, University of the Philippines.


Baskerville, Charles, Visiting Commonwealth Professor of Geology. B.S. 1953, City College of New York; M.S. 1958, Ph.D. 1965, New York University.

Baum, Richard Frederick, Associate Professor of Computer and Information Sciences. B.A. 1962, Oberlin College; M.S. 1964, Ph.D. 1969, University of Michigan.

Bausch, Richard C., Associate Professor of English. B.A. 1974, George Mason University; M.F.A. 1975, University of Iowa.


Beale, Guy O., Associate Professor of Electrical and Computer Engineering. B.S. 1967, Virginia Polytechnic Institute and State University; M.S. 1974, Lynchburg College; Ph.D. 1977, University of Virginia.

Beam, Walter R., Visiting Professor of Information Systems and Systems Engineering. B.S., M.S., Ph.D. 1953, University of Maryland.


Bednash, Geraldine D., Adjunct Assistant Professor of Nursing. B.S. 1965, Texas Woman's University; M.S.N., The Catholic University of America.

Behrmann, Michael Mitts, Associate Professor of Education. B.S. 1971, M.Ed. 1972, University of Cincinnati; Ed.D. 1978, Teachers College, Columbia University.

Bender, Mark G., Adjunct Assistant Professor of Economics. B.A. 1963, M.A. 1964, Ph.D. 1967, University of Connecticut.

Bennett, James T., Professor of Political Economy and Public Policy. B.S. 1964, M.S. 1966, Ph.D. 1970, Case Western Reserve University.

Benshoff, James M., Acting Assistant Professor of Education. B.A. 1973, College of William and Mary; M.Ed. 1983, George Mason University.

Bergmann, Johannes Dietrich, Associate Professor of English; Chair, English Department; Associate Professor of American Studies A.B. 1963, Amherst College; M.A. 1964, Ph.D. 1969, University of Connecticut.

Bergoffen, Debra Beth, Professor of Philosophy; Chair, Department of Philosophy and Religious Studies. A.B. 1962, Syracuse University; M.A. 1966, Ph.D. 1974, Georgetown University.


Berry, Alois K., Assistant Professor of Electrical and Computer Engineering. B.S. 1967, M.S. 1969, University of Delhi; M.S. 1981, Ph.D. 1985, University of Missouri.


Bever, David, Associate Professor of Health Education. B.S. 1970, University of Dayton; M.A. 1973, Ball State University; Ph.D. 1978, Purdue University.

Beyer, Barry Keith, Professor of Education; Professor of American Studies. B.A. 1953, University of Rochester; M.A. 1954, Syracuse University; Ph.D. 1962, University of Rochester.


Bishop, William D., Visiting Professor of Law. B.A. 1971, Memorial University; M.A. 1972, University of Western Ontario; B.A. 1974, B.C.L. 1975, Magdalen College, Oxford; Ph.D. 1986, London School of Economics.

Black, Peter W., Associate Professor of Anthropology; Acting Chair, Department of Sociology and Anthropology. B.S. 1964, Columbia University; M.A. 1971, Ph.D. 1977, University of California at San Diego.

Black, W.M., Associate Professor of Electrical and Computer Engineering. B.E.E. 1962, University of Virginia; M.S.E.E. 1967, Ph.D. 1971, Pennsylvania State University.

Blaha, John, Associate Professor of Psychology. B.S. 1965, State University of New York at Stony Brook; M.A. 1966, Ph.D. 1971, Ohio State University.


Bodie, Rita M., Assistant Professor; Director of Student Aid. B.A. 1974, Marymount Manhattan College; M.S. 1977, Polytechnic Institute of New York.

Boehm-Davis, Deborah A., Assistant Professor of Psychology. Ph.D. 1980, University of California.

Bohan, Doris K., Counselor, Counseling Center. B.A. 1972, George Mason College of the University of Virginia; M.A. 1974, George Mason University; Ed.D. 1983, Virginia Polytechnic Institute and State University.

Boileau, Don Michael, Professor of Communication; Chair, Department of Communication. A.B. 1964, Stanford University; M.A. 1965, Ph.D. 1972, University of Oregon.

Boland, M. Lucille, Assistant Professor of Nursing. B.S.N. 1968, University of Maryland; M.S.N. 1977, The Catholic University of America.


http://catalog.gmu.edu

Bonfadini, John E., Associate Professor of Education. B.S. 1959, M.A. 1964, State Teachers College at California, Pennsylvania; Ph.D. 1976, Virginia Polytechnic Institute and State University.

Borkman, Thomasina Smith, Associate Professor of Sociology. B.A. 1958, Occidental College; M.A. 1959, Ph.D. 1969, Columbia University.

Bost, Patricia J., Instructor in Accounting. B.S. 1970, Washington University; M.B.A. 1982, Southern Illinois University; CMA.


Boucoulis, N.G., Assistant Professor of Engineering. B.S. 1969, Polytechnic Institute of Brooklyn; Ph.D. 1972, Illinois Institute of Technology.

Boudreaux, Donald J., Assistant Professor of Economics. B.A. 1965, Harvard University; M.A. 1968, California State College at Hayward; Ph.D. 1970, Ohio State University.

Bowler, Michael Henry, Assistant Professor of Social Work. B.A. 1957, College of the Holy Cross; M.S.W. 1959, Boston College School of Social Work; Ph.D. 1979, Washington University.


Bradley, Thomas Michael, Associate Professor of Music. B.M. 1965, Greensboro College; M.M. 1967, Ph.D. 1975, Northwestern University.

Bradwick, Faye L., Assistant Professor of Accounting. B.S. 1974, J.D. 1984, Syracuse University; CPA, State of New York.

Brady, Jody, Lecturer in English. B.A. 1979, University of Virginia; M.F.A. 1987, George Mason University.


Brenkus, Rosemarie, Assistant Professor of Nursing. B.S.N.Ed. 1964, Wilkes-Barre College; M.Ed. 1976, Virginia Polytechnic Institute and State University.

Bricker, Owen P., Adjunct Professor of Biology. B.S. 1958, Franklin and Marshall College; B.S. 1960, Lehigh University; Ph.D. 1964, Harvard University.

Bright, Cheryl F., Lecturer in Biology. B.S. 1974, M.S. 1977, George Mason University.

Brinig, Margaret F., Associate Professor of Law. B.A. 1970, Duke University; J.D. 1973, Seton Hall University.

Broadsus, Joseph E., Assistant Professor of Law. B.A. 1979, Florida International University; M.A. 1984, University of Miami; J.D. 1981 Florida State University.

Broune, Benjamin J., Associate Professor of Communication. B.A. 1974, University of Georgia; M.A. 1977, Ph.D. 1980, University of Kansas.

Brophy, Judith M., Lecturer in Dance. B.A. 1972, University of Chicago.


Brown, Lorraine Anne, Professor of English; Professor of American Studies. B.A. 1951, M.A. 1961, University of Michigan; Ph.D. 1968, University of Maryland.

Brown, Luther, Associate Professor of Biology. B.A. 1973, Elmhurst College; M.S. 1976, Ph.D. 1979, Ohio State University.


Brown, William Thomas, III, Instructor; Baseball Coach/Assistant Manager, Sports and Recreation Complex. B.A. 1980, George Mason University.

Brownling, Andrew, Lecturer in English. A.B. 1971, Princeton University; M.A. 1976, Ph.D. 1984, University of Virginia.

Brundage, Christina A., Instructor; Librarian. B.S. 1972, Humboldt State University; M.L.S. 1982, Catholic University.

Brunette, Peter Clark, Jr., Associate Professor of English. B.A. 1965, M.A. 1967, Duquesne University; Ph.D. 1975, University of Wisconsin at Madison.

Buchanan, James M., University Professor of Economics. B.S. 1940, Middle Tennessee State College; M.A. 1941, University of Tennessee; Ph.D. 1948, University of Chicago.


Buffardi, Louis C., Associate Professor of Psychology. A.B. 1964, University of Rochester; M.A. 1966, Fordham University; Ph.D. 1970, Kansas State University.

Bull, Jesse Angel, Assistant Professor of Spanish. B.L.C. 1942, Instituto del Vedado, La Habana; J.D. 1955, University of Havana; M.A. 1967, State University of New York at Buffalo; Ph.D. 1986, George Washington University.

Bumgarner, Kenneth Eugene, Assistant Professor; Associate Vice President and Dean for Student Services. B.S. 1963, State Teachers College, Lockhaven, Pennsylvania; M.A. 1966, George Washington University.


Burger, Christine, Research Assistant Professor of Education. B.S. 1975, M.Ed. 1977, Pennsylvania State University; Ph.D. 1977, Iowa State University.


Burns, John Barclay, Assistant Professor of Religious Studies. M.A. 1964, St. Andrew’s University, Scotland; B.D. 1967, Glasgow University, Scotland; Ph.D. 1971, St. Andrew’s University, Scotland.


Burton, John W., Distinguished Visiting Professor of Conflict Resolution and International Relations, Center for Conflict Management. B.A. 1937, Sydney University; Ph.D. 1942, London University; D.Sc. 1970, International Relations.


Bushnell, David S., Research Associate Professor; Director of Center for Improvement of Productivity. Ph.B. 1947, M.A. 1950, University of Chicago.

Butler, Henry N., Assistant Professor of Law. B.A. 1977, University of Richmond; M.A. 1979, Ph.D. 1982, Virginia Polytechnic Institute and State University; J.D. 1982, University of Miami.

Byrne, James E., Associate Professor of Law. B.A. 1968, University of Notre Dame; J.D. 1977, Stetson University; LL.M. 1978, University of Pennsylvania.

Cabeil, Mary Katherine, Associate Professor of Mathematics. B.A. 1955, University of Tennessee; M.A. 1957, Ph.D. 1960, University of Virginia.

Calderer, Maria-Carme, Assistant Professor of Mathematics. B.A. 1974, M.S. 1975, University of Barcelona, Spain; Ph.D. 1980, Heriot-Watt University, Edinburgh, U.K.

Campbell, Kathleen, Assistant Professor of Theatre. B.S. 1965, Northwestern University; M.A. 1971, Trinity University; M.A. 1980, Ph.D. 1980, University of Dallas.

Cantor, David James, Lecturer in English. B.A. 1977, Grinnell College; M.F.A. 1985, George Mason University.

Cao, Le Thi, Associate Professor of Accounting. B.S. 1955, University of Tennessee; M.A. 1957, Ph.D. 1982, University of Nebraska Medical Center; Ph.D. 1981, University of Nebraska at Lincoln.

Cheese, Alan, Associate Professor of English. B.A. 1961, Ph.D. 1974, Rutgers University.

Chian, Rex C.S., Lecturer in Engineering. B.S.E.E. 1961 Taipe Institute of Technology; M.S.E.E. 1967, Wichita State University.

Clement, Shirley, Lecturer in English. B.A. 1972, Rutgers University; M.A. 1978, University of Dayton.

Chu, Harold S., Associate Professor of Education; Director of Center for Bilingual/Multicultural Teacher Preparation. B.S. 1954, Seoul National University; M.A. 1968, Ph.D. 1973, University of Minnesota.

Chung, Jae Wan, Associate Professor of Economics. B.C. 1962, M.C. 1965, Seoul National University; M.A. 1969, State University of New York at Buffalo; Ph.D. 1972, New York University.

Church, Lucy C., Lecturer in Government and Politics. B.S. 1981, M.P.A. 1985, George Mason University.

Cianci, Marlene, Assistant Professor of Nursing. B.S.N. 1965, M.S. 1966, University of Maryland; College Park.

Clapsaddle, Gerald Lee, Associate Professor of Art. B.F.A. 1964, Drake University; M.F.A. 1966, Indiana University.

Clark, Robert Purdue, Professor of Government and Politics. B.A. 1962, Tulane University; M.A. 1964, Ph.D. 1966, Johns Hopkins University.

Clements, Frances Marion, Lecturer in English. B.A. 1950, Randolph-Macon Women's College; M.A. 1962, Ph.D. 1967, Ohio State University.


Coffinberger, Richard Lee, Associate Professor of Business Legal Studies; Associate Dean for Academic Programs. B.A. 1970, University of Florida; M.S. 1979, Virginia Polytechnic Institute and State University; J.D. 1974, Wake Forest University.

Cohen, Debra J., Assistant Professor of Management. B.S.C. 1979, Ohio University; M.L.H.R. 1982, Ph.D. 1987, Ohio State University.

Cohen, Martin Bernard, Assistant Professor of History; Assistant Professor of American Studies. A.B. 1959, M.A. 1960, State University of New York at Albany; Ph.D. 1975, George Washington University.

Cole, John D.R., Research Professor of Public Management; Director, Public Management Institute. B.A. 1949, M.A. 1951, University of Redlands; M.P.A. 1983, University of Southern California.

Coleman, Steven C., Director of Law Admissions. B.A. 1977, Washington Bible College; M.Ed. 1982, George Mason University.

Collier, Virginia P., Assistant Professor of Education; Associate Director of Bilingual/Multicultural Teacher Preparation. B.A. 1980, University of North Carolina; M.A. 1973, The American University; Ph.D. 1980, University of Southern California.

Collins, Susan Alice, Assistant Professor; Assistant Director of Athletics. B.S. 1970, University of Dayton; M.S. 1973, Northern Illinois University.

Colonna, Flavia, Assistant Professor of Mathematics. Laurea 1976, Universita degli Studi di Bari; M.A. 1980, Ph.D. 1985, University of Maryland.
Colvin, Mark, Assistant Professor of Sociology. B.A. 1972, M.A. 1974, North Texas State University; Ph.D. 1985, University of Colorado.


Coniglio, Jamie Wright, Associate Professor; Associate Librarian for Public Services. B.A. 1974, Saint Mary College; M.L.S. 1976, Indiana University.

Conlan, Timothy J., Assistant Professor of Government and Politics. A.B. 1974, University of Chicago; Ph.D. 1982, Harvard University.

Connelly, Catherine E., Associate Professor of Nursing; Associate Dean, Graduate Program, School of Nursing. B.S.N. 1964, The Catholic University of America; M.S.N. 1965, University of Pennsylvania; D.N.Sc. 1979, The Catholic University of America.

Conti, Roberta, Assistant Professor of Nursing. B.S.N. 1963, M.S.N. 1969, University of Maryland.

Cook, C. Barrie, Adjunct Professor of Biology. B.S. 1945, Hampden-Sydney College; M.D. 1948, The George Washington University.

Cook, G., Earle C. Williams Professor of Information Technology and Electrical Engineering, Sc.D. 1965, Massachusetts Institute of Technology.

Cook, Gerald, Associate Professor of Electrical and Computer Engineering. B.S. 1970, National Cheng Kung University; Ph.D. 1977, University of Hawaii.

Cook, John A., Instructor; Men's Track and Field Coach. B.A. 1965, University of Maryland; M.A. 1977, St. Thomas University.

Cook, John William, Associate Professor of Theatre. A.B. 1971, Harvard University; M.A. 1975, University of Virginia; Ph.D. 1978, The American University.

Cooley, W.C., Associate Professor of Electrical and Computer Engineering, Sc.D., 1951, Massachusetts Institute of Technology.

Cooper, Bruce B., Instructor; Athletic Schedules Coordinator, Recreation Sports Complex. B.S. 1967, North Carolina State University.

Cooper, John Henry, Professor of Health Education. B.A. 1948, Simpson College; M.A. 1952, Drake University; D.P.E. 1955, Indiana University.

Copeland, Peter Hutson, Associate Professor of Physics. B.S. 1967, University of Michigan; Ph.D. 1973, Stanford University.

Cordero, Anne Deing, Associate Professor of French. Dipl. Dolmetscher 1955, University of Mainz; M.A. 1957, University of Florida; Ph.D. 1966, The George Washington University.


Costello, John L., Jr., Professor of Law. A.B. 1952, J.D. 1955, Dickinson School of Law; M.A. 1964, Fletcher School of Law and Diplomacy; LL.M. 1975, University of Virginia.

Cotton, Herbert Jr., Lecturer in Decision Sciences. B.A. 1967, Clemson University; M.S. 1971, Georgia Institute of Technology.


Coviello, Joann M., Assistant Professor of Nursing. B.S.N. 1980, Duquesne University; M.S.N. 1987, University of Pittsburgh.

Cozzens, Robert Francis, Professor of Chemistry; Deputy Director of the George Mason Institute. B.S. 1963, Ph.D. 1966, University of Virginia.

Crafton, Steven M., Associate Professor of Law. B.A. 1971, University of Arizona; J.D. 1984, Emory University; Ph.D. 1976, Texas A&M University.


Crain, W. Mark, Professor of Economics. B.S. 1972, University of Houston; Ph.D. 1976, Texas A&M University.

DeFreitas, Barbara M., Lecturer in Nursing. B.S. 1970, Villanova University; M.S.M.P.H. 1979, University of Hawaii.


Denham, Suzanne Ayers, Assistant Professor of Psychology. B.A. 1972, Western Maryland College; M.A. 1974, Johns Hopkins University; Ph.D. 1985, University of Maryland, Baltimore County.


De Nys, Martin John, Associate Professor of Philosophy. A.B. 1967, M.A. 1969, Ph.D. 1974, Loyola University, Chicago.


Deshmukh, Marion Fishel, Associate Professor of History; Chair, Department of History. B.A. 1966, University of California at Los Angeles; M.A. 1967, Ph.D. 1975, Columbia University.

Derrick, Scott Steven, Assistant Professor of English. B.A. 1975, Albright College; M.A.T. 1978, University of Chicago; Ph.D. 1987, University of Pennsylvania.


di Bonaventura, Sam Albert, Professor of Music. B.S. 1951, Juilliard School of Music; B.M. 1953, M.M. 1954, Yale University; M.A. 1961, Harvard University; D.M.A. 1964, Peabody Conservatory of Music.

Diecioch, Richard Joseph, Associate Professor of Geology. B.S. 1970, Rensselaer Polytechnic Institute; M.S. 1974, Duke University; Ph.D. 1980, University of North Carolina at Chapel Hill.


Dietz, Thomas, Associate Professor of Sociology. B.G.S. 1972, Kent State University; Ph.D. 1979, University of California at Davis.

DiGilio, Deborah A., Lecturer in Health and Physical Education. B.S.E. 1976, State University of New York; M.P.H. 1982, University of North Carolina at Chapel Hill.

Dinan, Desmond, Adjunct Assistant Professor of History. B.A. 1978, National Institute for Higher Education; M.A. 1981, Georgetown University; Ph.D. 1985, National University of Ireland.


Domazl, Teresa J., Associate Professor of Marketing. B.S. 1976, Niagara University; M.B.A. 1977, Ph.D. 1981, University of Cincinnati.

Doneison, John III, Lecturer in Mathematics. B.A 1963, Yale University; Ph.D. 1971, Stanford University.

Donnelly, Eugene M., Assistant Professor; Coordinator of Off-Campus Instruction. B.S. 1954, United States Military Academy; M.A. 1975, The George Washington University.


Doyle, Warren, Adjunct Assistant Professor of Education; Director of Hemlock Overlook Center. M.A. 1972, Ph.D. 1981, University of Connecticut.

Duara, Prasenjit, Assistant Professor of History. B.A. 1970, M.A. 1972, St. Stephen's College, Delhi, India; Ph.D. 1983, Harvard University.

Duck, Lloyd Earl, Associate Professor of Education. A.B. 1966, The College of William and Mary; M.A.T. 1968, Ph.D. 1974, University of Virginia.


Dunklee, Dennis R., Assistant Professor of Education. B.M.E. 1961, Wichita State University; M.Ed. 1969, Washburn University; Ph.D. 1985, Kansas State University.

Dworzecka, Marysa, Associate Professor of Physics. M.Sc. 1954, Ph.D. 1969, Warsaw University, Poland.

Dwyer, Maureen L., Lecturer in Nursing. B.S.N. 1979, University of Cincinnati; M.S.N. 1985, The Catholic University of America.

Dzama, Mary Ann, Associate Professor of Education. B.A. 1964, Carlow College, Pittsburgh; M.Ed. 1968, Duquesne University; Ed.D. 1972, University of Virginia.

Eagle, Steven J., Associate Dean for Academic Affairs; Professor of Law. B.B.A. 1965, City College of New York; J.D. 1970, Yale University.

Earp, S.L., Assistant Professor of Electrical and Computer Engineering. B.S., College of William and Mary; M.S., Ph.D. 1985, Duke University.


Eckart, J. Dana, Visiting Assistant Professor of Computer Science. B.S. 1981, M.S. 1983, Ph.D. 1987, Georgia Institute of Technology.

Eckroad, Thomas M., Lecturer in English. B.A. 1972, University of California; M.A. 1980, Wright State University; Ph.D. 1984, University of Colorado.

Edgemon, Albert Wesley, Professor of Education; Chair, Department of Educational Leadership and Human Development. B.A.E. 1954, University of Florida; M.A. 1960, Ed.D 1964, Teachers College, Columbia University.

Egan, John Thomas, Lecturer in Computer Science. B.S. 1965, St. Louis University; M.S. 1967, State University of New York at Buffalo.

Eghhart, Elisabeth, Lecturer in Biology. Ph.D. 1955, University of Graz, Austria.

Ehike, Graceann, Assistant Professor of Nursing. B.S.N. 1969, M.S.N. 1972, University of Washington, Seattle.

Ehrlich, Robert, Professor of Physics; Chair, Department of Physics. B.S. 1959, Brooklyn College; Ph.D. 1964, Columbia University.

Eldeib, Hany K., Assistant Professor of Electrical and Computer Engineering. B.S. 1975, M.S. 1979, Cairo University, Egypt; M.S. 1980, Ph.D. 1986, University of Virginia.
Ellis, William D., Lecturer in Mathematics. B.A. 1970, Washington State University; M.S. 1971, University of Oregon; M.Phil., Yale University.

Ellsworth, Robert A., Lecturer in Economics. B.S. 1968, Ph.D. 1974, University of Utah.

Ellsworth, Robert Waldro, Professor of Physics. B.S. 1960, Yale University; Ph.D. 1966, University of Rochester.

Eisun, Esther Nies, Professor of German. B.A. 1960, Colorado College; M.A. 1964, Ph.D. 1969, Rice University.


Embridge, Mark E., Assistant Director of University Development. B.A. 1975, Gordon College.

Emsley, Michael Gordon, Professor of Biology. B.S. 1953, A.R.C.S. 1953, Imperial College of Science and Technology. University of London; Ph.D. 1964, University of London.

Engle, Charles R., Associate Dean for Administration; Professor of Law. B.S. M.E. 1953, Kansas State University; LL.B. 1959, The American University.


Entrikin, Richard Lee, Associate Professor of Marketing. B.A. 1966, Western Illinois University; M.S. 1967, Northern Illinois University; Ph.D. 1976, St. Louis University.


Erdwins, Carol J., Associate Professor of Psychology. B.A. 1970, Rockford College; Ph.D. 1975, Washington University.

Erickson, Mary K., Lecturer in Finance/Real Estate and Urban Development. B.S. 1973, Pittsburgh State University; M.B.A. 1985, George Mason University.

Ernst, Carl Henry, Professor of Biology. B.S. 1960, Millersville State College; M.Ed. 1963, West Chester State College; Ph.D. 1969, University of Kentucky.

Eastman, Barbara, Lecturer in English. B.A. 1969, St. Louis University; M.F.A. 1987, George Mason University.

Evans, John Clement, Associate Professor of Physics. B.S. 1960, University of Oklahoma; M.S. 1962, Rensselaer Polytechnic Institute; M.S. 1964, Ph.D. 1966, University of Michigan.

Evers, Leslie M., Lecturer in Nursing. B.S.N. 1971, M.S.N. 1975, University of Cincinnati.

Fagenson, Ellen A., Assistant Professor of Management. B.A. 1976, State University of New York at Buffalo; Ph.D. 1987, Princeton University.

Fairley, Richard E., Professor of Information Systems and Systems Engineering. M.S. 1965, University of New Mexico; Ph.D. 1971, University of California at Los Angeles.

Fant, Catherine T., Assistant Professor of Nursing. B.S.N. 1969, Columbus University; M.S.N. 1977, University of Nebraska.

Farfan, Victor Armando, Lecturer in Spanish. B.A. 1953, University of Cuczo; Peru; M.A. 1979, George Mason University.

Fawcett, Mary Laughlin, Lecturer in English. B.A. 1966, Wellesley College; M.Phil. 1969, Yale University.

Feeg, Veronica DeCarolis, Associate Professor in Nursing. B.S.N. 1971, Villanova University; M.A. 1975, New York University; Ph.D. 1979, Pennsylvania State University.

Ferrara, Peter J., Associate Professor of Law. B.A. 1976, Harvard College; J.D. 1979, Harvard University.

Ferri, Michael G., Professor of Finance; Chair, Department of Finance. A.B. 1967, Xavier University; M.A. 1969, University of Notre Dame; Ph.D. 1975, University of North Carolina at Chapel Hill.

Follot, Sheila, Associate Professor of Art. A.B. 1967, Vassar College; Ph.D. 1979, University of Pennsylvania.


First, R. Douglas, Adjunct Assistant Professor of Government and Politics. B.A. 1952, Miami University; M.Ed. 1974, University of Hawaii; Ed.D. 1978, George Washington University.

Fischer, Klaus Gunter, Associate Professor of Mathematics. B.S. 1966, Lafayette College; M.A. 1968, Syracuse University; Ph.D. 1973, Northwestern University.

Fischer, Ruth, Lecturer in English. B.S. 1968, Our Lady of the Lake--University of San Antonio; M.A. 1983, George Mason University.

Fish, Michael T., Assistant Professor; Director of Office of Research. B.A. 1965, St. Joseph's College; M.A. 1971, The Catholic University of America.


Fisher, Myra H., Assistant Professor, B.S.N. 1965, University of Cincinnati; M.S.N. 1971, D.N.Sc. 1978, The Catholic University of America.

Fitzpatrick, Kathy E., Assistant Professor of Decision Sciences. B.A. 1969, University of North Carolina at Greensboro; M.S. 1970, Florida State University; M.S. 1978, Ph.D. 1984, Clemson University.

Fleishman, Edwin A., University Professor of Psychology. B.S. 1946, Loyola College; M.A. 1949, University of Maryland; Ph.D. 1951, Ohio State University; D.Sc. 1982, University of Edinburgh.

Fletcher, James John, Assistant Vice President for Academic Affairs and Dean for: Undergraduate Studies; Associate Professor of Philosophy. B.A. 1963, Iona College; M.A. 1966, Marquette University; Ph.D. 1973, Indiana University.

Flinn, Jane Margaret, Associate Professor of Physics and Psychology; Chair, Department of Psychology. B.A. 1960, Oxford University; M.S. 1962, University of California at Los Angeles; Ph.D. 1969, The Catholic University of America; Ph.D. 1974, The George Washington University.

Fonseca, James William, Associate Professor of Geographic and Cartographic Sciences; Associate Dean of the Graduate School. B.A. 1969, Bridgewater State College; Ph.D. 1974, Clark University.


Foster, John Burt, Jr., Associate Professor of English. B.A. 1967, Harvard University; M.Phil. 1971, Ph.D. 1974, Yale University.


Framer, Barbara S., Assistant Professor; Assistant Coordinator of Community Services. B.A. 1972, M.A. 1974, Washington University.

Francescati, Marianna, Professor of Spanish; Chair, Department of Foreign Languages and Literatures. B.A. 1956, Instituto del Profesorado, Argentina; A.M. 1959, Ph.D. 1970, University of Illinois, Urbana-Champaign.

Friedlander, Melvin A., Assistant Professor of Government and Politics; Director of Center for Middle East Studies. A.B. 1962, Loyola College; M.A. 1968, Ph.D. 1982, The American University.

Friedley, Sheryl Ann, Associate Professor of Communication. B.S. 1971, M.A. 1972, Ball State University; Ph.D. 1977, Purdue University.

Friedman, Lee, Assistant Professor of Psychology. B.S. 1977, Bradley University; M.A. 1979, University of Missouri; Ph.D. 1986, Rice University.


Froman, Wayne J., Associate Professor of Philosophy. B.A. 1966, Yale University; M.A., Ph.D. 1975, Fordham University.

Gabel, Michael Randy, Associate Professor of Mathematics. B.S. 1965, Massachusetts Institute of Technology; M.A. 1968, Ph.D. 1972, Brandeis University.

Gabriel, Arnold D., Professor of Music; Chair, Department of Performing Arts. B.S. 1950, M.S. 1953, Ithaca College.

Gadd, Jack E., Lecturer in Accounting. B.S. 1979, Old Dominion University; M.S. 1982, Boston University; CPA.

Gaffney, Kathleen F., Assistant Professor of Nursing. B.S. 1967, St. Joseph College; M.S. 1971, Ph.D. 1984, University of Maryland.

Galiehr, Donald Raymond, Associate Professor of English. B.A. 1964, St. Bonaventure University; M.A. 1966, Fordham University; Ph.D. 1974, The Catholic University of America.


Gardner, Ella Paton, Assistant Professor of Decision Sciences. B.S. 1955, Massachusetts Institute of Technology; M.B.A. 1959, University of Michigan; D.B. 1982, George Washington University.


Gaske, George Daniel, Adjunct Assistant Professor of Economics. B.A. 1968, Ouachita Baptist University; M.A. 1971, Ph.D. 1976, Rio University.


Gervasi, Alice A., Lecturer in Nursing, B.S.N. 1982, American University; M.S. 1985, University of Maryland.

Gesmer, Theodore Lee, Associate Professor of Psychology. B.S. 1965, Fordham University; M.A. 1967, Ph.D. 1971, University of Maryland.


Gibson, C. Richard, Assistant Professor; Assistant Librarian. B.A. 1977, M.L.S. 1981, University of Maryland.


Gilstrap, Robert L., Professor of Education; Associate Chair, Department of Education. B.S. 1954, M.Ed. 1960, North Texas State University; Ed.D. 1963, George Peabody College.


Gittler, Joseph Bertram, Visiting Professor of Sociology. B.S. 1934, M.A. 1936, University of Georgia; Ph.D. 1941, University of Chicago.

Given, Barbara Knight, Associate Professor of Education. B.S. 1958, Kansas State University; M.Ed. 1967, University of Oregon; Ph.D. 1974, The Catholic University of America.

Giesecker, Richard Anthony, Associate Professor of History. B.S. 1958, University of Wisconsin; M.A. 1959, Marquette University; Ph.D. 1968, University of Maryland.

Godin, Andrea, Instructor; Head Athlete Trainer. B.S. 1979, University of Massachusetts; M.Ed. 1980, University of Virginia.

Golcochea, Ambrose, Associate Professor of Information Systems and Systems Engineering. B.S. 1966, California State Polytechnic College; M.S. 1970, California State University at Los Angeles; Ph.D., 1977, University of Arizona.

Gokhale, B.V., Associate Professor of Electrical and Computer Engineering. B.S., University of Bombay; M.S., University of Allahabad; Ph.D., 1951, Massachusetts Institute of Technology.


Goldin, Mark G., Associate Professor of Spanish. B.S. 1965, Ph.D. 1968, Georgetown University.


Golomb, Louis, Assistant Professor of Anthropology. B.S. 1968, Columbia University; M.A. 1971, Ph.D. 1976, Stanford University.


Gonzalez, Carlos M., Assistant Professor of Computer Science. B.S. 1968, Tecnologico y de Estudios Superiores de Monterrey; M.S. 1970, University of Oregon; Ph.D. 1975, Case Western Reserve University.

Goodman, Charles R., Lecturer in Psychology. A.B. 1968, Ohio University; M.A. 1977, Ph.D. 1979, California School of Professional Psychology.

Goodwin, Stephen Hardy, Associate Professor of English, A.B. 1965, Harvard University; M.A. 1969, University of Virginia.

Goplerud, Eric, Assistant Professor of Psychology. B.A. 1971, M.A. 1977, Ph.D. 1979, State University of New York at Buffalo.

Gordon, Norman William, Instructor; Women's Track and Field Coach. B.S. 1973, Lock Haven State College; M.Ed. 1975, University of Virginia.


Gortner, Harold Franklin, Associate Professor of Government and Politics; Chair, Department of Public Affairs. A.B. 1963, Earlham College; M.P.A. 1966, M.A. 1969; Ph.D. 1971, Indiana University.


Green, James C., Lecturer in Decision Sciences. B.A. 1971, University of Washington; M.S. 1975, Air Force Institute of Technology; M.S. 1978, University Nebraska.


Gretz, Michael R., Assistant Professor of Biology. B.Bc. 1977, Central Michigan University; Ph.D. 1981, Arizona State University.


Grie, Kevin, Assistant Professor of Economics. Ph.D. 1984, Washington University in St. Louis.

Griffith, Hurdus M., Associate Professor. B.S.N. 1963, Jamestown College; M.N. 1969, University of Washington; Ph.D. 1984, University of Maryland.

Grissom, Helen H., Assistant Professor; Librarian. A.B. 1951, Syracuse University; M.L.S. 1973, University of Maryland.

Grossberg, Frederick Alan, Associate Professor of English. BA 1966, University of Toronto; Ph.D. 1975, Harvard University.

Gross, Thomas, Jr., Associate Professor of Decision Sciences. B.S. 1975, University of South Carolina; M.A. 1977, Ph.D. 1981, Clemson University.

Gupton, John T., III, Professor of Chemistry. B.S. 1967, Virginia Military Institute; M.S. 1969, Ph.D. 1975, Georgia Institute of Technology.

Gurland, Joseph Ingaram, Associate Professor. B.S. 1941, University of North Carolina; M.A. 1947, Harvard University.

Guzman, Louis Enrique, Lecturer in Geography. B.A. 1949, M.A. 1950, University of California at Los Angeles; Ph.D. 1956, University of Chicago.

Haack, Barry Norbert, Associate Professor of Geographic and Cartographic Sciences; Program Director of Geographic and Cartographic Sciences. B.S. 1969, University of Wisconsin; M.A. 1972, San Diego University; Ph.D. 1977, University of Michigan.


Haggard, Stuart E., Lecturer in Management. B.S. 1971, University of North Carolina; M.B.A. 1978, Texas Tech University.

Hamburger, Henry James, Associate Professor of Computer Science. B.S. 1961, Massachusetts Institute of Technology; M.S. 1963, University of Minnesota; M.S. 1966, Ph.D. 1971, University of Michigan.

Hamilton, Kenneth L., Lecturer in Decision Sciences. B.S. 1964, University of Georgia; M.S. 1972, Ph.D. 1979, Georgia Institute of Technology.


Hampton, Felix Gene, Lecturer in Management. B.S. 1952, Boston University; M.B.A. 1954, Harvard University.


Hanweck, Gerald Alfred, Assistant Professor in Economics. B.A. 1964, Stanford University; M.A. 1967, Ph.D. 1971, Washington University.

Harper, Goreen C., Associate Professor. B.S.N. 1971, Cornell University; M.S.N. 1974, The Catholic University of America; Ph.D. 1980, University of Maryland.

Harrington, Richard Irving, Associate Professor; Men's Basketball Coach. B.S. 1968, University of Maryland.

Harris, Carl M., Professor and Chair of the Operations Research and Applied Statistics Department. B.S., Queens College of the City University of New York; M.S., Ph.D. 1966, Polytechnic University of New York.

Harrison, Judith L., Assistant Professor of Music Education. B.M.E. 1963, Florida State University; M.A.T. 1968, University of North Carolina at Chapel Hill; Ed.D. 1980, University of North Carolina at Greensboro.


Hart, Jayne Thompson, Professor of Biology. B.A. 1964, North Central College; M.S. 1966, Ph.D. 1969, University of Wisconsin.


Harrington, Jack B., Adjunct Professor of Geology. B.S. 1959, Iowa State University; Ph.D. 1968, Rice University.

Harvey, James William, Assistant Professor of Marketing. B.S. 1966, University of Illinois, Urbana-Champaign; M.B.A. 1968, University of Miami; Ph.D. 1977, Pennsylvania State University.

Hass, Marvin, Lecturer in Physics. B.S. 1950, City University of New York; M.S. 1952, Syracuse University; Ph.D. 1955, University of Michigan.

Hassamiller, Susan L., Lecturer in Nursing. B.S. 1977, Florida State University; M.S.N. 1983, University of Nebraska.

Hawkes, Robert Thomas, Jr., Assistant Professor of History; Dean of the Division of Continuing Education. B.A. 1964, Randolph-Macon College; M.A. 1967, Ph.D. 1975, University of Virginia.

Haynie, William J., III, Assistant Professor of Education. B.S. 1970, Old Dominion University; M.Ed. in Ed. 1975, Clemson University; Ph.D. 1978, Pennsylvania State University.

Hazera, Lydia DeLeon, Associate Professor of Spanish. B.A. 1945, University of Colorado; A.M. 1949, University of Michigan; Ph.D. 1971, The George Washington University.

Hecht, Edward Dixon, Assistant Professor; Director of Academic Computing Services. A.B. 1957 Indiana University; M.S. 1972, The George Washington University.


Hecho, Hugh, Robinson Professor. B.A. 1965, George Washington University; M.A. 1967, Manchester University, England; Ph.D. 1970, Yale University.


Helfiols, Francis D., Assistant Professor of Biology. B.S. 1978, National University of Athens, Greece; M.S. 1981, M.S. 1983, Ph.D. 1985, University of Wisconsin, Madison.

Heller, Kenneth H., Professor of Accounting; Chair, Department of Accounting. B.S.B.A. 1969, M.A. 1972, University of Florida; Ph.D. 1977, University of Texas at Austin; CPA, States of Texas and Georgia.


Henriques, Peter Ros, Associate Professor of History. B.A. 1959, Trinity College; B.D. 1963, Princeton Theological Seminary; Ph.D. 1971, University of Virginia.

Herath, Jayantha, Visiting Assistant Professor of Computer Science. B.Sc. 1978, University of Sri Lanka; M.E. 1984, University of Electro-Communications, Japan.

High, Jack C., Assistant Professor of Economics. B.A. 1972, University of Utah; Ph.D. 1980, University of California at Los Angeles.

http://catalog.gmu.edu
Hill, Judith Mary, Assistant Professor of Philosophy. B.A. 1973, Lycoming College; M.A. 1976, Ph.D. 1982, University of North Carolina at Chapel Hill.

Hill, Thomas Harry, Associate Professor of Music; Assistant Dean, College of Arts and Sciences. B.M. 1949, M.M. 1955, Boston University; D.M.A. 1970, The Catholic University of America.

Hinz, Kenneth J., Associate Professor of Electrical and Computer Engineering. Ph.D. 1981, University of Virginia.


Ho, Alana Wang, Associate Professor; Librarian. B.A. 1964, Providence College. Taiwan; M.S. 1967, Kansas State Teachers College.

Hobberman, Marc N., Assistant Dean of School of Law; Assistant Director of Law and Economics Center. B.A. 1970, University of Rochester.

Hodges, Devon Leigh, Associate Professor of English. B.A. 1972, University of California at Berkeley; M.A. 1977, Ph.D. 1979, State University of New York at Buffalo.

Hoefler, Daniela, Lecturer in English. B.A. 1984, M.A. 1987, George Mason University.


Holman, Emmet Lou, Associate Professor of Philosophy. B.S. 1963, Pennsylvania State University; M.A. 1967, Ph.D. 1973, University of Maryland.

Holmes, Gerald V., Instructor; Librarian. B.S. 1981, University of North Carolina at Charlotte; M.S.L.S. 1984, University of North Carolina at Chapel Hill.

Holsinger, Donald Charles, Associate Professor of History. B.A. 1970, Bethel College; Ph.D. 1979, Northwestern University.


Hood, Chalmers, Lecturer in History. B.S. 1969, United States Naval Academy; M.A. 1972, University of Maine; Ph.D. 1979, University of Maryland.

Hood, Joseph Lindbergh, Lecturer in Marketing/Logistics. B.A. 1953, Georgetown College, Kentucky; M.B.A. 1959, University of Louisville; Ph.D. 1975, Ohio State University.

Hoppel, Gerald W., Associate Professor of Information Systems and Systems Engineering. M.A. 1973, Ph.D. 1975, University of Maryland.

Horton, Lois Elaine, Assistant Professor of Sociology. B.A. 1964, University of Buffalo; M.A. 1969, University of Hawaii; Ph.D. 1977, Brandeis University.

Houser, Edward C., Assistant Professor; Technical Director of Performing Arts. B.A. 1965, University of Texas at El Paso.


Hughes, John James, Associate Professor of Social Work. A.B. 1944, M.S.W. 1954, Fordham College; D.S.W. 1979, The Catholic University of America.


Hurt, Charlene S., Associate Professor: Director of Libraries. B.A. 1964, Culver-Stockton College; M.L. 1974, Emporia State University; M.P.A. 1979, University of Kansas.


Hutcheson, Janet L., Instructor: Admissions Counselor. B.S. 1979, George Mason University.


Hytoft, Anette, Instructor in English. B.A. 1984, University of Virginia.

Hyson, John Leland, Associate Professor of Finance. B.S.B.A. 1957, University of Kansas; M.B.A. 1964, University of Missouri at Kansas City; Ph.D. 1973, The American University.

Ingram, Mark A., Lecturer in Accounting. B.S. 1972, Drake University; M.A.S. 1974, University of Illinois; CPA, State of Illinois.

Irving, Lorna Marie, Associate Professor of English; Assistant Professor of American Studies. B.A. 1959, McMaster University; M.A. 1965, Carleton University; Ph.D. 1977, The American University.


Izmirli, Ilhan A., Visiting Assistant Professor of Mathematics. B.S. 1974, M.S. 1978, Bosphorus University, Turkey.


Jacob, Evelyn Joan, Associate Professor of Education. B.A. 1971, Ohio State University; Ph.D. 1977, University of Pennsylvania.


Jacobs, Mark D., Assistant Professor of Sociology. B.A. 1968, Columbia College, Columbia University; M.A. 1977, Ph.D. 1986, University of Chicago.


Jenkins, Helen M., Assistant Professor of Nursing. M.S.N. 1976, The Catholic University of America; Ph.D. 1983, University of Maryland.


Jessee, Gordon E., Assistant Professor; Librarian. B.A. 1968, M.A. 1971, University of Virginia; M.S.L.S. 1980, University of North Carolina at Chapel Hill.


Joffe, Bruce H., Adjunct Professor of Communication. B.A. 1970, State University of New York at Stony Brook; M.S. 1975, Southern Illinois University; Ph.D. 1985, Pacific Western University.

Johnson, Edward D., Assistant Professor of Chemistry. B.A. 1971, Carleton College; Ph.D. 1977, Northwestern University.

Johnson, George Robert, Jr., Assistant Professor of Law. B.A. 1973, Amherst College; J.D. 1976, Columbia University.

Johnson, Jean, Adjunct Associate Professor of Nursing. B.S.N. 1975, Texas Woman's University; M.S.N. 1978, University of Wisconsin.

Johnson, Manuel H., Jr., Associate Professor of Economics. B.S. 1973, Troy State University; M.S. 1975, Ph.D. 1975, Florida State University.


Johnston, David Ware, Professor of Biology. B.S. 1949, M.S. 1950, University of Georgia; Ph.D. 1954, University of California at Berkeley.

Johnston, Joyce, Lecturer in English. B.A. 1969, Dickinson College; M.A. 1971, Emory University.

Johnston, Robert Dail, Associate Professor of Finance. B.S. 1966, M.S. 1967, Ph.D. 1974, University of Alabama.


Jonas, Robert B., Assistant Professor of Biology. B.S. 1971, University of Miami; Ph.D. 1981, University of North Carolina.


Jones, Charles, Assistant Professor of English. B.A. 1979, St. John's College, Maryland; Ph.D. 1985, University of Massachusetts.

Jones, Edward Valentine III, Assistant Professor; In-Service Education Coordinator. B.A. 1960, Davidson College; M.S. 1972, Virginia Commonwealth University; Ed.D. 1977, Virginia Polytechnic Institute and State University.

Jones, Julie K., Assistant Professor of Education. B.A. 1969, University of South Florida; M.A. 1973, George Peabody College; Ph.D. 1978, University of Pittsburgh.


Jones, R. Christian, Associate Professor of Biology. B.A. 1973, Rice University; M.A. 1977, Vanderbilt University; Ph.D. 1980, University of Wisconsin.

Jordan, Shannon McIntyre, Associate Professor of Philosophy. B.A. 1972, The College of William and Mary; M.A. 1975, Ph.D. 1981, University of Georgia.


Joyner, Nancy Douglas, Assistant Professor; Coordinator, Community Services. B.A. 1967, Southeastern Louisiana University; M.A. 1968, Ph.D. 1973, Florida State University.

Kafatos, Minas, Professor of Astronomy. A.B. 1967, Cornell University; Ph.D. 1972, Massachusetts Institute of Technology.

Kang, Yohn S., Lecturer in Chemistry. B.S. 1962, Seoul National University; M.S. 1974, University of New Mexico; Ph.D. 1977, Seoul National University.


Kaplan, Deborah, Associate Professor of English. B.A. 1972, Sarah Lawrence College; M.A. 1974, Ph.D. 1979, Brandeis University.

Kaplan, Ruth Annette, Associate Professor of Biology. B.S. 1961, Brooklyn College; M.S. 1965, Ph.D. 1970, University of Wisconsin.


Keaney, Winifred Glessen, Associate Professor of English. B.A. 1964, Good Counsel College; M.A. 1966, Duquesne University; Ph.D. 1975, University of Maryland.

Keller, Morton, Lecturer in Geography. B.S. 1946, City College of New York.


Kelly, Donald Preston, Associate Professor of Biology. B.S. 1962, University of Tennessee; M.S. 1965, University of Florida; Ph.D. 1970, University of Hawaii.

Kendall, Julie E., Assistant Professor of Decision Sciences. B.A. 1976, University of Minnesota; M.A. 1978, University of Wisconsin at Milwaukee; Ph.D. 1984, University of Nebraska at Lincoln.


Kendall, Margarida, Assistant Professor in Art. Fine Arts Diploma 1974, Corcoran School of Art; M.F.A. 1982, The Catholic University of America.


Kennedy, Robert S., Adjunct Professor of Biology. B.S. 1970, College of William and Mary; M.A. 1971, College of William and Mary; Ph.D. 1977, Louisiana State University.

Kernan, Jerome B., Professor of Marketing; George Mason University Foundation Chair of Behavioral Analysis. Ph.D. 1962, University of Illinois.


Kerschberg, Larry, Professor of Information Systems and Systems Engineering. B.S. 1964, Case Institute of Technology; M.S. 1966, University of Wisconsin; Ph.D. 1969, Case Western Reserve University.


Kiapour, Ahmad, Lecturer in Chemistry. B.S. 1945, College of Technology; M.S. 1950, University of Oklahoma; Ph.D. 1953, University of Colorado.

Kiley, William Thomas, Associate Professor of Mathematics. B.S. 1960, St. Mary's College; Ph.D. 1969, Brown University.

Killian, Michael, Assistant Professor; Librarian. B.A. 1967, East Texas State University; M.S. 1970, University of Illinois; M.A. 1983, Morehead State University.

King, David J., Vice President for Academic Affairs; Professor of Psychology. B.A. 1951, Boston University; M.A. 1952, University of Maine; Ph.D. 1958, University of Maryland.

Kjell, Bradley P., Assistant Professor of Computer Science. B.A. 1970, University of Illinois; M.S. 1971, Illinois State University; Ph.D. 1985, University of Wisconsin.

Klappert, Peter, Associate Professor of English. A.B. 1964, Cornell University; M.A. 1967, M.F.A. 1968, University of Iowa.

Kline, Stephen Warren, Assistant Professor of Geology. B.S. 1973, Georgia State University; M.S. 1981, Georgia Institute of Technology; Ph.D. 1984, University of Georgia.

Knight, G. Diane, Assistant Professor; Counselor, Counseling Center. B.A. 1966, Bethany College; M.Div. 1970, Yale University; M.S. 1978, Loyola College; Ph.D. 1985, University of Maryland.

Knowles, Yereth K., Visiting Professor of Public Administration. B.A. 1944, M.A. 1945, University of Wisconsin; Ph.D. 1972, Institute of International Relations, University of Geneva.

Kodadek, Marie Peterson, Assistant Professor of Nursing. B.S.N. 1974, College of St. Teresa; M.S.N. 1976, University of Colorado.

Kolker, Aliza, Associate Professor of Sociology. B.A. 1969, Barnard College; M.Phil., 1974, Ph.D. 1975, Columbia University.

Kopak, Catharine A., Adjunct Assistant Professor of Nursing. B.S.N. 1974, M.N. 1976, Pennsylvania State University; Ph.D. 1985, University of Maryland.


Kowski, Joan P. Sullivan, Assistant Professor of Physics. B.S. 1962, Fordham University; M.S. 1970, Manhattan College; Ph.D. 1982, University of Virginia.

Kozak, Maryanne, Lecturer in English. B.A. 1967, Gannon University; M.A. 1974, Wichita State University.

Kraft, Gerald J., Instructor in Accounting. B.S. 1959, University of Detroit; M.B.A. 1971, Creighton University; CPA, State of Maryland.

Kramer, Wendy J., Assistant Professor of Nursing. B.Sc. N. 1967, University of Ottawa; M.S., University of California; Ed.D. 1982, Seattle University.

Krauss, Michael I., Professor of Law. B.A. 1973, Carleton University; LL.B. 1976, Universite de Sherbrooke; LL.M. 1978, Yale University.

Kratz, Edward Walter, Associate Professor of Art. B.F.A. 1964, The School of the Art Institute of Chicago; M.F.A. 1967, Syracuse University.

Krech, Shepard III, Professor of Anthropology. B.A. 1967, Yale University; B.Litt. 1969, Oxford University; Ph.D. 1974, Harvard University.

Krupp, Walter, Associate Professor of Electrical and Computer Engineering. B.S. 1962, University of Akron; M.S. 1963, Ph.D. 1969, Ohio State University.

Kuebrieh, David Lawrence, Associate Professor of English; Associate Professor of American Studies. A.B. 1966, Washington University; M.A. 1969, Ph.D. 1973, University of Chicago.

Kulesza, John S., Assistant Professor of Mathematics. B.S. 1978, Bucknell University; M.A. 1981, Ph.D. 1987, State University of New York at Binghamton.


Kurtz, Elizabeth, Lecturer in English. B.S.E. 1964, Southwest Missouri State University; M.S.E. 1983, Central Missouri State University.

Kvancz, Jack E., Associate Professor; Director of Athletics. B.A. 1968, Boston College.

Lambert, Vickie A., Associate Professor of Nursing. B.S.N. 1966, University of Iowa; M.S.N. 1973, Case Western Reserve University; D.N.Sc. University of California, San Francisco.

Langley, Christina G., Assistant Professor of Nursing. B.S. 1970, Georgetown University; M.P.H. 1974, Johns Hopkins University.


Lankford, William Fleet, Professor of Physics; Professor of American Studies. B.A. 1960, University of Virginia; M.S. 1964, Ph.D. 1969, University of South Carolina.


Latimer, Kenneth, Associate Professor of Theatre. B.A. 1958, M.A. 1965, Baylor University.

Lavine, Thelma Z., Robinson Professor, Philosophy and Religious Studies. A.B., Radcliffe College; A.M., Ph.D., Harvard University.

Lavoie, Donald C., Associate Professor of Economics. B.S. 1973, Worcester Polytechnic Institute; Ph.D. 1981, New York University.

Lawrence, James Franklin, Associate Professor of Mathematics. B.S. 1972, Oklahoma State University; Ph.D. 1975, University of Washington.

Lawrey, James D., Associate Professor of Biology. B.S. 1971, Wake Forest University; A.M. 1973, University of South Dakota; Ph.D. 1977, Ohio State University.


Laybourne, Roxie C., Adjunct Professor of Biology. B.A. 1946, Meredith College; M.A. 1950, The George Washington University.

Lees, Linda, Lecturer in English. B.A. 1973, Boston University; M.A. 1982, University of California.


Lepard, David, Research Associate Professor of Education. B.M.E. 1954, Northwestern University; M.A. 1964, Clarion Graduate School; Ed.D. 1971, University of Massachusetts.

Leung, Hank, Instructor; Women's Soccer Coach. B.S. 1970, Drexel University.


Levy, David M., Assistant Professor of Economics. B.A. 1966, University of California at Berkeley; M.A. 1970, University of Chicago; Ph.D. 1979, University of Chicago.


Levy, Jack, Associate Professor of Education. B.A. 1967, City University of New York; M.A. 1970, Adelphi University; Ph.D. 1973, University of Southern California.


Lewis, James III, Instructor; Women's Basketball Coach. B.S. 1966, West Virginia University; M.A. 1970, Tennessee State University.


Liberman, Lee S., Assistant Professor of Law. B.A. 1979, Yale University; J.D. 1983, University of Chicago.


Lieb-Brilhart, Barbara, Adjunct Professor of Communication. B.A. 1965, Queens College; M.A. 1960, Ph.D. 1966, Pennsylvania State University.

Lim, Teck Cheong, Associate Professor of Mathematics. B.S. 1970, Nanyang University; M.A. 1971, Ph.D. 1974, Dalhousie University.

Lin, Jenq-Eng, Assistant Professor of Mathematics. B. S. 1999, National Tsing Hua University; Ph.D. 1976, Brown University.

Lindberg, Mark Byron, Assistant Professor of Geographic and Cartographic Sciences. B.A. 1972, Macalester College; M.A. 1979, Kent State University; Ph.D. 1987, University of Kansas.


Linn, John Roy, Assistant Professor of Health and Physical Education. B.S. 1960, Bowling Green University; A.M. 1967, The George Washington University.


Liu, Yuen Chou, Associate Professor of Nursing. B.S.N. 1968, Incarnate Word College; M.S.N. 1960, The Catholic University of America; Ph.D. 1972, New York University School of Education.

Lont, Cynthia, Assistant Professor of Communication. B.A. 1974, State University of New York; M.A. 1976, Southern Illinois University; Ph.D. 1984, State University of Iowa.

Looney, Sara C., Assistant Professor of Communication; Director of the Academic Advising Center. B.A. 1966, Marietta College; M.A. 1969, Ph.D. 1974, University of Denver.

Luce, Robert, Adjunct Professor of Geology. B.A. 1960, Dartmouth College; M.S. 1962, University of Illinois, Ph.D. 1969, Stanford University.


Lyttton, Randolph Hoopes, Associate Professor of History; Assistant Dean of the College of Arts and Sciences. B.A. 1966, Pennsylvania State University; M.A. 1968, University of Washington; Ph.D. 1973, Pennsylvania State University.

MacDonald, Bruce A., Lecturer in Mathematics. B.A. 1971, Case Western Reserve University; M.P.A. 1975, Golden Gate University; M.S. 1983, University of New Hampshire; Ph.D. 1987, Massachusetts Institute of Technology.


MacReynolds, William K., Lecturer in Economics. B.S. 1967, University of California at Berkeley; M.A. 1971, Ph.D. 1974, University of Southern California.

Maddux, James Eugene, Associate Professor of Psychology. B.A. 1976, University of Richmond; M.A. 1979, Ph.D. 1982, University of Alabama.


Mahler, Juliane G., Associate Professor of Government and Politics; Director of MPA Program. B.A. 1968, Macalester College; M.A. 1970, Ph.D. 1976, State University of New York at Buffalo.


Malinky, John, Adjunct Professor of Geology. B.A. 1977, Franklin and Marshall College; M.S. 1980, Ohio University; Ph.D. 1984, University of Iowa.

Manchester, Bruce Borden, Professor of Communication. B.S. 1967, University of Rhode Island; M.A. 1970, Ph.D. 1971, Purdue University.


Manne, Henry G., Dean and University Professor of Law. B.A. 1950, Vanderbilt University; J.D. 1952, University of Chicago; J.S.D. 1966, Yale University.

Mao, Agnes Liu, Associate Professor; Librarian. B.L. 1966, National Chengchi University; M.L.S. 1970, University of Maryland.


Mark, Abraham, Visiting Professor in Computer Science. B.A. 1944, Brooklyn College; M.S. 1945, Ph.D. 1947, Cornell University.

Marquez, Roberto, Robinson Professor. Ph.D. 1975, Harvard University.

Marsh, Jay W., Associate Professor; Associate Director of Athletics. B.S. 1973, George Mason University.

Martin, William Reed, Professor of Education. B.A. 1955, Gettysburg College; M.A. 1956, Syracuse University; Ph.D. 1968, University of Minnesota.

Mash, Donald Joseph, Associate Professor; Executive Vice President for Administration. B.S. 1964, Indiana University of Pennsylvania; M.A. 1966, University of Pittsburgh; Ph.D. 1974, Ohio State University.


Mason, Ronald K., Lecturer in Accounting. B.S. 1969, University of Utah; CPA, State of Virginia.

Matthews, Frank Lemar, Assistant Professor; Affirmative Action Officer. B.A. 1971, Clemson University; J.D. 1972, M.B.A. 1976, University of South Carolina.

Mattusch, Carol Cressay, Associate Professor of Art; Chair, Department of Art. B.A. 1969, Bryn Mawr College; Ph.D. 1975, University of North Carolina.

Maturi, Vincent F., Lecturer in Chemistry. B.C.E. 1939, Cooper Union; M.S. 1943, Polytechnic Institute of Brooklyn; Ph.D. 1948, New York University.


McCaffrey, Michael S., Lecturer in Government and Politics. B.S. 1972, American University; M.S. 1975, George Washington University.

McCann, Linda D., Assistant Professor; Assistant Librarian. B.S. 1976, State University of New York at Oneonta; M.L.S. 1980, The Catholic University of America.


McDaniel, Andrew L., Assistant Professor of Mathematics. B.A. 1975, New College of the University of South Florida; M.S. 1978, University of Cincinnati; Ph.D. 1985, Brandeis University.

McDermott, Michael James, Jr., Associate Professor of Philosophy; Registrar. A.B. 1958, Fordham University; Ph.L. 1959, Loyola Seminary.

McGuiness, Kathleen, Acting Director, Individualized Study Degree Programs. B.S. 1970, Caldwell College; M.S. 1971, Miami University.
Mcintyre, James T., Jr., Lecturer in Government and Politics. A.B. 1963, University of Georgia; J.D. 1963, University of Georgia School of Law.


Meites, Louis, Professor of Chemistry. Chair, Department of Chemistry B.S. 1945, Middlebury College, M.A. 1946, Ph.D. 1947, Harvard University.

Mellinger, Jeanne C., Associate Professor of Psychology; Chair, Gerontology Certificate Committee. B.A. 1948, Swarthmore College; Ph.D. 1952, University of Chicago.

Melosh, Barbara, Associate Professor of English; Associate Professor of American Studies. B.A. 1972, Middlebury College; M.A. 1975, Ph.D. 1979, Brown University.

Metcalf, Jonathan, Lecturer in Nursing. B.S. 1973, University of Maryland.


Michalski, Ryzsard, Professor of Computer Science. B.S. 1959, Polytechnical University of Warsaw, Poland; M.S. 1961, Leningrad Polytechnical Institute, USSR; Ph.D. 1969, Polytechnical University of Silesia, Poland.

Mieleczeak, Eugenie Vorburer, Professor of Physics. B.S. 1953, Queens College; M.S. 1957, Ph.D. 1963, The Catholic University of America.

Miles, Veryl V., Assistant Professor of Law. B.A. 1977, Wells College; J.D. 1980, The Catholic University of America.


Miller, William J., Lecturer in English. B.A. 1981, Villanova University; M.A. 1983, University of Delaware.

Millonig, Virginia Ann, Associate Professor of Nursing; Continuing Education Coordinator. B.S.N. 1956, Marquette University; M.S. 1971, University of California at San Francisco; Ph.D. 1981, University of Maryland.

Millspaugh, Peter Edward, Associate Professor of Business Law. B.S. 1958, United States Military Academy; M.A. 1963, Georgetown University; J.D. 1968, The American University.

Mitchell, John, Associate Professor; Assistant Athletic Director. B.A. 1958, California State University, Los Angeles.

Mitchell, Joseph A., Lecturer in Government and Politics. B.S. 1965, Auburn University; M.S. 1968, University of North Dakota; J.D. 1976, Woodrow Wilson School of Law.

Mohamed, Fouad Yehia, Lecturer in Mathematics. B.S. 1971, M.S. 1974, Cairo University; M.M. 1976, University of Waterloo; Ph.D. 1981, Florida State University.

Mones-Hattai, Barbara, Assistant Professor of Art, B.F.A. 1974, M.F.A. 1979, Rhode Island School of Design.


Montebello, Mary S., Professor of Education. B.S. 1950, Ohio Dominican College; M.S. 1954, Ph.D. 1964, Ohio State University.

Moore, Charles A., Jr., Lecturer in Finance. B.S. 1955, University of Maryland.

Moore, Jean Burley, Associate Professor of Nursing. B.S.N. 1964, University of North Carolina, Chapel Hill; M.S.N. 1977, Ph.D. 1984, The Catholic University of America.

Moretz, Walter Jennings, Jr., Associate Professor of Psychology. A.B. 1955, Lenoir Rhyne College; B.D. 1959, Lutheran Seminary; Ph.D. 1970, Florida State University.

Morris, Walter D., Jr., Assistant Professor of Mathematics. B.S. 1980, Iowa State University; M.S. 1984, Ph.D. 1986, Cornell University.


Mose, Douglas George, Professor of Geology. Chair, Department of Geology. B.S. 1965, University of Illinois, Urbana-Champaign; M.S. 1968, Ph.D. 1971, University of Kansas.


Moyer, Michael William, Instructor; Wrestling Coach/Administrative Assistant, Patriot Club. B.S. 1983, West Chester State College; M.S.Ed. 1985, James Madison University.

Mulherin, Girard M., Assistant Professor. B.A. 1960, St. Mary's Seminary and University, Baltimore; S.T.B. 1962, Licentiate 1964, St. Mary's Seminary and University.

Muir, Timothy J., Foundation Professor of Law. B.A. 1971, San Diego State University; J.D. 1974, University of California, Los Angeles.

Mulpuri, V.R., Assistant Professor of Electrical and Computer Engineering. M.S. 1983, Ph.D. 1985, Oregon State University.

Murphy, Claudia Lynne, Associate Professor of Dance. B.A. 1969, Western College; M.A. 1972, The George Washington University.

Murphy, James Owen, Jr., Instructor; Director of Intramurals and Club Sports. B.S. 1975, George Mason University.

Murphy, Marilyn L., Lecturer in Nursing. B.S. 1962, M.T. Mary College; M.S.N. 1981, Virginia Polytechnic Institute and State University.


Nadeau, Robert Lee, Associate Professor of English; Associate Professor of American Studies. B.A. 1966, University of the South; M.A. 1967, Ph.D. 1970, University of Florida.


Nathan, Betty, Assistant Professor; Assistant Director of Development for Research and Special Projects. B.A. 1950, Swarthmore College; M.S.L.S. 1959, Drew University.


Nell, Kathleen Marie, Adjunct Assistant Professor of Nursing. B.S.N. 1967, Marquette University; M.S.N., D.N.Sc. 1985, The Catholic University of America.


Nelson, Marie Wilson, Assistant Professor of English. B.A. 1964, Furman University; M.Ed. 1968, Ed.D. 1981, University of Georgia.

Nguyen, Hung M., Associate Professor of Government and Politics. L.L.S. 1980, University of Saigon; M.A. 1963, Ph.D. 1965, University of Virginia.

Norris, Eugene Michael, Associate Professor of Computer Science. B.A. 1962, University of South Florida; Ph.D. 1969, University of Florida.

Norris, James N., Adjunct Professor of Biology. B.A. 1968, M.A. 1971, San Francisco State University; Ph.D. 1975, University of California, Santa Barbara.

Norvell, Ralph, Dean Emeritus of the School of Law; Professor of Law. B.A. 1943, J.D. 1946, Baylor University; LL.M. 1948, University of Michigan.

North, Percy, Assistant Professor of Art; Assistant Professor of American Studies. B.A. 1966, Radford College; M.A. 1968, Pennsylvania State University; Ph.D. 1974, University of Delaware.


Nuttall, Thomas J., Acting Assistant Professor of Education. B.A. 1965, State University College at Oneonta; M.S.T. 1971, Rutgers University.

Oakley, M. Dabney, Jr., Development Officer of the School of Law. B.A. 1971, Virginia Military Institute; J.D. 1979, T.C. Williams School, University of Richmond.


O'Connor, John Sylvester, Associate Professor of English; Associate Professor of American Studies. A.B. 1968, University of Michigan; M.A. 1969, Ph.D. 1974, University of Virginia.

O'Malley, John W., Associate Dean for External Programs, School of Business Administration. B.S. 1954, University of Scranton; M.S. 1956, University of Delaware; M.B.A. 1978, Loyola of Baltimore.


Ornyukel, Ibrahim H., Assistant Professor of Computer Science. Ph.D. 1985, University of Michigan.

Orzechowski, William P., Assistant Professor of Economics. B.A. 1966, Park College; M.A. 1969, University of Missouri; Ph.D. 1974, Virginia Polytechnic Institute and State University.

Ostrowski, John W., Assistant Professor of Government and Politics. A.B. 1974, Youngstown State University; M.A. 1977, Ph.D. 1980, Kent State University.

Ott, Barbara, Assistant Professor of Nursing. B.S.N. 1978, California State University; M.S.N. 1981, The Catholic University of America; Ph.D. 1986, Texas Woman's University.

Owens, Collin Don, Assistant Professor of English. B.A. 1965, University of Notre Dame; M.A. 1968, National University of Ireland; Ph.D. 1975, Kent State University.

Pacheco, Josephine Fennell, Professor of History; Director, George Mason Center for the Study of Constitutional Rights. B.A. 1941, University of Richmond; M.A. 1943, Ph.D. 1950, University of Chicago.

Paddock, Patric W., Visiting Lecturer in Mathematics. B.A. 1952, Williams College; M.S. 1951, George Washington University; M.S. 1984, George Mason University.

Padden, John, Robinson Professor. B.A. 1959, Occidental College; M.A. 1961, Oxford University; Ph.D. 1968, Harvard University.


Prager, Iris, Assistant Professor of Health Education. B.S. 1965, Brooklyn College; M.A. 1968, Ph.D. 1978, University of Maryland.

Procaccino, Margaret Anne, Research Instructor in Health and Physical Education. B.S. 1978, Towson State University; M.A. 1981, Central Michigan University.

Prill, B.E., Adjunct Assistant Professor. Ed.D. 1975, North Texas State University.

Prill, France J., Assistant Professor; Director of the Office of International Programs and Services and the English Language Institute. B.A. 1956, Swarthmore College; M.A. 1973, State University of New York at Buffalo; Ph.D. 1981, University of Paris.

Pugh, Robert L., Assistant Professor of Decision Sciences. B.S. 1953, East Carolina University; M.A. 1964, Ph.D. 1975, The American University.


Pyrek, Carolyn, Lecturer in English. B.S. 1966, M.A. 1968, Louisiana State University; Ph.D. 1975, University of Tennessee.

Pyrek, Steven J., Lecturer in English. B.A. 1966, University of Virginia; M.A. 1967, University of Michigan; Ph.D. 1976, University of Tennessee.

Qu, Yaoshuang, Assistant Professor of Computer Science. B.S. 1968, Tsing Hua University (China); M.S. 1981, Ph.D. 1986, University of Wisconsin.

Quammen, Donna, Assistant Professor of Computer Science. B.S. 1971, California State; M.S. 1981, Ph.D. 1986, University of Pittsburgh.

Quimby, Herman Carl, Lecturer in Decision Sciences. B.S. 1958, University of California at Los Angeles; M.S. 1964, United States Naval Postgraduate School.


Rader, Victoria Fries, Associate Professor of Sociology. B.A. 1966, University of California at Berkeley; M.A. 1968, Ph.D. 1973, University of Chicago.

Radner, John Barnet, Associate Professor of English. A.B. 1960, Harvard University; B.A. 1962, Trinity College; Ph.D. 1966, Harvard University.


Raines, Shirley C., Associate Professor of Education. B.S. 1967, M.S. 1972, Ed.D. 1979, University of Tennessee.

Rainey, Lloyd Daniel, Adjunct Assistant Professor of Communication. B.A. 1973, M.A. 1975, Memphis State University.

Raphael, Coleman, Dean of the School of Business Administration; Professor of Business Administration. B.C.E. 1945, City College of New York; M.C.E. 1951, Ph.D. 1966, Polytechnic Institute of Brooklyn.

Raskin, Miriam Susan, Associate Professor of Social Work. B.A. 1965, Brooklyn College; M.S.W. 1969, University of Maryland; Ed.D. 1981, Virginia Polytechnic Institute and State University.


Redmond, Georgine, Assistant Professor of Nursing; Assistant Dean, School of Nursing. B.S. 1959, College of Mount Saint Vincent; M.A. 1967, New York University; Ed.D. 1987, Virginia Polytechnic Institute and State University.


Reithlinghofer, Sally Jane, Assistant Professor; Assistant Director, Division of Continuing Education. B.S. 1964, Indiana University of Pennsylvania; M.A. 1969, Northwestern University.

Renaud, Kim Young-Key, Lecturer in Korean. B.A. 1963, Ewha Woman's University, Seoul, Korea; M.A. 1965, University of California, Berkeley; Ph.D. 1974, University of Hawaii, Honolulu.

Rendell, Barry, Professor of Decision Sciences; Chair, Department of Decision Sciences. B.S. 1969, Roosevelt University; M.S. 1971, Ph.D. 1975, University of Cincinnati.

Reynolds, Jesse E., Lecturer in Health and Physical Education. B.S.Ed. 1969, University of Houston.

Ribstein, Larry E., Professor of Law. B.A. 1968, Johns Hopkins University; J.D. 1972, University of Chicago.


Rice, Margaret D., Assistant Professor; Assistant Director of Development and Business Manager. B.S. 1981, Shenandoah College and Conservatory of Music; M.B.A. 1985, George Mason University.

Rice, Michael David, Associate Professor of Computer Science. B.S. 1969, M.S. 1970, Western Michigan University; Ph.D. 1973, Wesleyan University.

Richey, Michael B., Assistant Professor of Operations Research and Applied Statistics. B.S., M.S., University of Missouri at Rolla; Ph.D. 1985, Georgia Institute of Technology.

Ricouart, Janine M., Assistant Professor of French. Eng. Lic. 1973, Universite de Lille, France; Ph.D. 1986, University of California at Davis.

Rigney, Dawn Boots, Lecturer in Nursing. B.S.N. 1969, University of Virginia; M.S.N. 1980, George Mason University.


Rine, David C., Professor of Computer Science. B.S. 1963, Illinois State University; M.S. 1966, Oklahoma State University; Ph.D. 1970, University of Iowa.

Riordan, Patricia M., Instructor; Director of Admissions. B.S. 1963, Northeastern University; M.Ed. 1977, George Mason University.

Rishell, Lyle, Instructor in Marketing. B.S. 1955, University of Maryland; M.B.A. 1961, University of Arizona.

Riskind, John Haskell, Associate Professor of Psychology. B.A. 1970, University of Texas at Austin; Ph.D. 1977, Yale University.

Ro, Young-chan, Associate Professor of Religious Studies. B Th. 1965, M Th. 1966, Yonsei University; M Th. 1973, Union Theological Seminary; Ph.D. 1982, University of California at Santa Barbara.

Roback, Jennifer A., Assistant Professor of Economics. B.A. 1975, Ohio State University; M.S. 1978, Ph.D. 1980, University of Rochester.

Robbins, D. Keith, Jr., Assistant Professor of Strategic Management. B.S. 1977, M.S. 1979, Clemson State University.

Roberts, Francine E., Assistant Professor of Nursing. B.S. 1967, Brigham Young University; M.S. 1971, State University of New York at Buffalo.

Roberts, Ralph Kent, Associate Professor; Director of Counseling. B.A. 1965, Jamestown College; M.A. 1967, Ph.D. 1969, University of North Dakota.

Robinson, Victoria, Assistant Director, Career Services/Cooperative Education. B.A. 1972, State University of New York at Binghamton; M.Ed. 1977, Northeastern University.

Rockwood, Larry Lewis, Associate Professor of Biology; Chair, Department of Biology. B.S. 1965, Ph.D. 1972, University of Chicago.

Rollins, Sean J., Lecturer in Government and Politics. A.B. 1970, Georgetown University; M.S. 1976, American University; J.D. 1977, Georgetown University Law Center.

Rojas, Mario, Lecturer in Spanish. M.A. 1972, Ball State University, Indiana; Ph.D. 1978, Temple University.
Rosenblum, Don Harris, Assistant Professor; B.A. 1980, University of Maryland; M.A. 1982, Ohio State University.

Rosenblum, Karen E., Associate Professor of Sociology; B.A. 1970, Ph.D. 1979, University of Colorado.

Rosenstock, Herbert B., Lecturer in Physics; B.S. 1944, Clemson University; M.S. 1950, Ph.D. 1952, University of North Carolina.

Rosenzweig, Roy Alan, Associate Professor of History; Assistant Professor of American Studies; A.B. 1971, Columbia College; Ph.D. 1978, Harvard University.

Rosetti, Judith, Lecturer in Nursing; B.S. 1954, Skidmore College; M.A. 1968, Columbia University.

Ross, Kathleen E., Lecturer in Psychology; B.A. 1965, University of Michigan; M.A. 1978, George Mason University.

Roth, Carolyn Beth, Assistant Professor; Librarian; B.A. 1962, M.L.S. 1970, University of Iowa.

Roth, Ronald John, Associate Professor of Chemistry; B.S. 1967, City College of New York; Ph.D. 1972, Columbia University.

Rothbart, Daniel, Associate Professor of Philosophy; B.A. 1972, Fairleigh Dickinson University; M.A. 1975, State University of New York at Binghamton; Ph.D. 1978, Washington University.

Rowley, Charles, Professor of Economics; Dean of the Graduate School; Ph.D. 1964, University of Nottingham.

Roy, Pauline Anne, Associate Professor of Biology; B.S. 1967, M.S. 1971, The American University; Ph.D. 1974, University of Maryland.


Rudowski, Lorraine, Assistant Professor of Nursing; B.S.N. 1980, George Mason University; M.S.N. 1983, George Mason University.

Rugel, Robert Paul, Associate Professor of Psychology; B.A. 1965, Hiram College; Ph.D. 1971, Florida State University.

Ruhling, Robert O., Professor of Physical Education; Chair, Department of Health, Sport, and Leisure Studies; B.S. 1964, M.A. 1966, University of Maryland; Ph.D. 1970, Michigan State University.

Rundstrom, Robert Alan, Assistant Professor of Geographic and Cartographic Sciences; B.A. 1975, University of California at Berkeley; M.A. 1980, California State University at Northridge; Ph.D. 1987, University of Kansas.

Rush, Constance Anne, Lecturer in English; B.A. 1974, Mary Washington College; M.A. 1982, George Mason University.


Ruth, Stephen Ruddy, Professor of Decision Sciences; B.S. 1955, United States Naval Academy; Ph.D. 1971, University of Pennsylvania.

Rutledge, Amelia Ann, Associate Professor of English; B.A. 1968, Michigan State University; M.Phil., 1972, Ph.D. 1974, Yale University.

Ryan, Anna Gayle, Lecturer in English; B.A. 1962, Texas Technological University; M.A. 1964, Rice University; Ph.D. 1975, State University of New York at Stony Brook.

Ryan, Elizabeth, Adjunct Professor in Communication; B.A. 1974, University of Missouri; M.A. 1983, Antioch.

Saab, Omar Halim, Lecturer in Biology; B.S. 1981, George Mason University; M.S. 1984, University of Maryland.


Scha, George A., Instructor; Manager, Recreation Sports Complex; B.S. 1974, Old Dominion University.

Seb, Mian Muhammad, Associate Professor of History; B.A. 1955, M.A. 1956, Islamia College, University of the Punjab, Pakistan; Ph.D. 1965, University of London.

Sege, Andrew P., Professor of Information Technology; Dean, School of Information Technology and Engineering; B.S.E.E., Citadel; S.M.E.E., Massachusetts Institute of Technology; Ph.D. 1960, Purdue University.

Sailo, Gail, Lecturer in English; B.A. 1978, M.A. 1982, George Mason University.

Samuels, Linda Bartman, Associate Professor of Business Legal Studies; B.A. 1970, Queens College; M.P.A. 1971, State University of New York at Albany; J.D. 1975, University of Virginia.

Sandall, Dennis Joseph Dominic, Associate Professor of Government and Politics; B.A. 1967, Temple University; Ph.D. 1979, University of Strathclyde.

Sanford, James Francis III, Associate Professor of Psychology; B.A. 1966, Ohio Wesleyan University; M.S. 1968, Ph.D. 1973, Kansas State University.

Sanjaji, Feeridun B., Instructor in English as a Second Language, English Language Institute; B.A. 1972, University of Maryland; M.A. 1980, Southern Illinois University.

Saperstone, Stephen Harold, Professor of Mathematics; Chair, Department of Mathematical Sciences. B.E.P. 1962, Cornell University; M.A. 1965, Ph.D. 1970, University of Maryland.

Sarkaria, Karanbir S., Assistant Professor of Mathematics; B.S. 1966, Panjab University, Chandigarh, India; M.A. and Ph.D. 1974, State University of New York.

Setjla, Indubala, Assistant Professor of Physics. Ph.D. 1983, Columbia University.

Sauer, Timothy D., Assistant Professor of Mathematics. B.S. 1977, Michigan State University; Ph.D. 1982, University of California at Berkeley.

Sawal, Chhaya, Lecturer in Chemistry; B.S. 1970, M.S. 1972, Bangalore University; Ph.D. 1976, Indiana Institute of Technology.

Scheck, Frederick Kurt, Associate Professor of Health and Physical Education. B.A. 1965, M.A. 1972, California State University; Ph.D. 1976, Ohio State University.

Schaefer, David H., Associate Professor of Electrical and Computer Engineering. B.S. 1949, Tulane University.

Schank, John Frederic, Jr., Instructor in Decision Sciences. B.S.E.E. 1969, Drexel Institute of Technology; M.S. 1971, University of Pennsylvania.

Scherrens, Maurice William, Associate Professor; Vice President for Business and Finance. M.B.A. 1971, Central Michigan University; J.D. 1977, The George Washington University.


Schreder, Janet, Lecturer in English; B.A. 1971, University of Miami; M.F.A. 1987, George Mason University.

Schroeder, James F., Lecturer in Mathematics; B.A. 1967, Marist College; M.S. 1982, George Mason University.

Schuchman, Betty Jane, Associate Professor of Education; Assistant Dean of the College of Education and Human Services. B.S. 1953, M.S. 1963, Ed.D. 1967, Indiana University.

Schum, David A., Professor of Operations Research and Applied Statistics. B.S., M.S., Southern Methodist University; Ph.D. 1964, Ohio State University.

Schwartz, Marla J., Associate Professor; Librarian; A.B. 1971, Boston University; M.S. 1974, Simmons College; M. Phil. 1983, George Washington University.

Schwartz, Peter, Lecturer in German. Staatsexam 1969, Paedagogische Hochschule, Kaiserslautern; M.A. 1976, University of Richmond; M.A. 1978, University of Maryland.


Scimeca, Joseph Andrew, Professor of Sociology; B.A. 1962, Hunter College; M.A. 1965, Ph.D. 1972, New York University.

ScHott, Sherry, Lecturer in English. B.A. 1966, North Texas State University; M.A. 1983, American University; Ph.D. 1986, University of Maryland.

Sears, Carol Joyce, Associate Professor of Education. B.S. 1951, M.S. 1952, University of Wisconsin; Ph.D. 1976, The American University.

Sedgwick, Cynthia, Assistant Director, Career Services/Placement and Employer Relations. B.A. 1978, Hampton Institute.


Seidman, Stephen Benjamin, Professor of Computer Science. B.S. 1964, City College of New York; A.M. 1965, Ph.D. 1969, University of Michigan.

Seigel, George A., Assistant Professor of Economics. B.A. 1979, Drew University; Ph.D. 1986, New York University.

Seligmam, Linda H., Associate Professor of Education. A.B. 1966, Brandeis University; M.A. 1968, Ph.D. 1974, Teachers College, Columbia University.

Sell, Carl Leroy, Jr., Instructor; Director of Sports Information.

Shaefer, Stephanie Lynn, Lecturer in Communication. B.A. 1971, Meredith College; M.A. 1973, University of Miami.

Shaffer, Jay Charles, Professor of Biology. B.S. 1961, Bucknell University; Ph.D. 1967, Cornell University.


Shapiro, Jay A., Associate Professor of Mathematics. B.A. 1971, Rider College; Ph.D. 1975, Rutgers University.


Sheehan, Thomas Vincent, Lecturer in Decision Sciences. B.S. 1959, Manhattan College; M.S. 1970, Polytechnic Institute of New York.

Sherald, Allen Franklin, Associate Professor of Biology. B.S. 1964, Frostburg State College; Ph.D. 1973, University of Virginia.

Shev1s, Lecturer in English. B.A. 1951, University of Maine; M.L.S. 1977, Georgetown University.


Shore, Clare, Lecturer in Music. B.A. 1976, Wake Forest University; M.Mus. 1977, University of Colorado.

Shreve, Susan Richards, Professor of English. B.A. 1961, University of Pennsylvania; M.A. 1969, University of Virginia.


Shumate, T. Daniel, Assistant to the Dean, Division of Continuing Education; Associate Director, George Mason Center for the Study of Constitutional Rights. B.A. 1943, M.A. 1947, Ph.D. 1952, University of Virginia.

Sibley, Edgar, University Professor of Information Systems and Systems Engineering. B.S., University of London; Sc.D. 1967, Massachusetts Institute of Technology.

Stiff, Frederick Howard, Associate Professor of Information Systems and Systems Engineering; Associate Senior Vice President for University Computing and Information Systems. B.S. 1964, Worcester Polytechnic Institute; M.S. 1966, Ph.D. 1974, New York University.

Silva, Mary Elizabeth, Professor of Nursing. B.S. 1962, M.S. 1963, Ohio State University; Ph.D. 1976, University of Maryland.

Simkin, Mark G., Visiting Professor of Accounting. A.B. 1965, Brandeis University; M.B.A. 1968, Ph.D. 1972, University of California.

Simmons, John M., Lecturer in Government and Politics. A.B. 1952, Bucknell University; M.G.A. 1954, University of Pennsylvania.


Sims, Henry P., Jr., Professor of Organizational Behavior. B.S. 1961, Purdue University; M.B.A. 1967, University of Detroit; Ph.D. 1971, Michigan State University.

Singman, David H., Assistant Professor of Mathematics. B.S. 1972, M.S. 1976, Ph.D. 1980, McGill University, Canada.

Skog, Judith Ellen, Associate Professor of Biology. B.S. 1966, Tufts University; M.S. 1968, University of Connecticut; Ph.D. 1972, Cornell University.

Slayden, Suzanne Weems, Associate Professor of Chemistry. B.S. 1970, Ph.D. 1976, University of Tennessee.

Sloan, Karen, Lecturer in English. B.A. 1981, University of Maryland; M.F.A. 1985, University of California at Irvine.

Smith, Becky Jeanne, Lecturer in Health and Physical Education. B.S.Ed. 1964, M.S.Ed. 1972, State University of New York, College at Brockport; Ph.D. 1976, University of Illinois.

Smith, Donald Francis, Associate Professor of Education. B.S. 1960, M.A. 1960, East Carolina University; Ed.D. 1968, The American University.


Smith, John Melvin, Professor of Mathematics Education. B.S. 1959, University of Richmond; M.A. 1961, Ph.D. 1970, University of Maryland.


Smith, Kitty Simpson, Associate Professor of Nursing. B.S.N. 1958, M.S.N. 1960, The Catholic University of America.

Smith, Linda, Assistant Professor; Assistant Librarian. B.A. 1976, Dana Hall School, Wellesley and Boston College; M.L.S. 1979, Simmons College.

Smith, Richard A., Adjunct Professor of Biology. B.S. 1967, University of Richmond; M.S. 1969, University of Richmond; Ph.D. 1975, The Johns Hopkins University.

Smith, Robert F., Associate Professor of Psychology. B.S. 1971, University of Florida; M.A. 1973, Ph.D. 1976, University of Wisconsin.


Sned, Claybourne C., Lecturer in Chemistry. A.B. 1959, M.S. 1961, Emory University; Ph.D. 1966, Georgia Institute of Technology.

Sokett, Hugh T., Research Professor of Education; Director, Center for Applied Research and Development. B.A. 1959, M.A. 1964, Christ Church, University of Oxford; Ph.D. 1974, Kings College, University of London.

Soder, John Philip, Jr., Associate Professor of History. B.A. 1956, M.A. 1962, St. Bonaventure University; Ph.D. 1970, Georgetown University.

Sokol, Lisa M., Lecturer in Decision Sciences. B.S. 1974, State University of New York at Stony Brook; M.S. 1975, Northwestern University; Ph.D. 1978, University of Massachusetts.


Sonnenmann, Gail J., Assistant Professor; Librarian. B.A. 1974, Lawrence University; A.M.L.S. 1975, University of Michigan.


Spence, Vernon Gladden, Professor of History. B.A. 1946, McMurray College; M.A. 1947, Southern Methodist University; Ph.D. 1968, University of Colorado.


Spikell, Mark A., Professor of Education. A.B. 1963, Miami University; M.Ed. 1967, Xavier University; Ed.D. 1972, Boston University.

Srebnick, Alan Keith, Instructor; Associate Director of Development for Athletics. B.S. 1971, University of Connecticut.

Stalick, Wayne Myron, Professor of Chemistry. B.A. 1964, University of Oregon; Ph.D. 1969, Northwestern University.

Stallings, William T., Lecturer in Mathematics. B.S. 1957, University of the South; M.A. 1966, University of Texas; Ph.D. 1971, Texas Tech University.

Stanley, Melissa Sue, Professor of Biology. B.S. 1953, M.A. 1959, University of Oregon; Ph.D. 1965, University of Utah.

Stannard, Charlotte M., Instructor; Counselor, Counseling Center. B.A. 1955, San Jose State University; M.Ed. 1980, George Mason University.

Stansbery, Margaret, Lecturer in English. B.S. 1966, University of Missouri; M.A. 1983, George Mason University.


Stephanou, H. E., Associate Professor of Electrical and Computer Engineering. B.S., American University of Beirut; M.S., Ph.D., Purdue University.


Stephenson, Richard W., Lecturer in Geography. B.A. 1966, George Washington University; M.S. 1976, Catholic University of America.

Stevens, Scott M., Acting Assistant Professor of Education. B.S. 1973, M.S.Ed. 1975, Northern Illinois University.


Stewart, Jeffrey C., Assistant Professor of History. B.A. 1971, University of California; M.A. 1974, Yale University; Ph.D. 1979, Yale University.


Storm, Jan D., Lecturer in Biology. B.S. 1975, University of Maryland; M.S. 1979, George Mason University; Ph.D. 1984, The Johns Hopkins University.

Story, Patrick Lee, Associate Professor of English. A.B. 1962, University of Missouri; M.A. 1963, Ph.D. 1968, Northwestern University.


Sugrue, Timothy F, Assistant Professor of Finance. B.S. 1975, U.S. Military Academy at West Point; Ph.D. 1985, The University of Massachusetts at Amherst.


Sutera, Janice L., Instructor; Coordinator of Career Counseling. B.A. 1975, University of Delaware; M.A. 1977, Ohio State University.


Sypher, Eileen Bower, Associate Professor of English. A.B. 1968, Mount Holyoke College; Ph.D. 1976, University of Connecticut.

Tabak, D., Professor of Information Technology and Engineering. B.S.E.E. 1959, M.S. 1963, Technion, Haifa, Israel; Ph.D. 1967, University of Illinois.

Tackett, Lou Rae, Assistant Professor of Nursing. B.S. 1958, Aidersdon-Broadus; M.S. 1968, The Catholic University of America.


Taub, Stephen Robert, Professor of Biology. A.B. 1955, University of Rochester; Ph.D. 1960, Indiana University.

Tavani, Nicholas John, Associate Professor of Sociology. A.B. 1951, Temple University; B.D. 1957, Reformed Episcopal Seminary; M.A. 1965, Ph.D. 1969, University of Maryland.

Taylor, Anita Marie Grimm, Professor of Communication. B.S. 1957, M.S. 1959, Kansas State University; Ph.D. 1971, University of Missouri.


Thaiss, Christopher Jacob, Associate Professor of English. B.A. 1970, University of Virginia; M.A. 1971, Ph.D. 1975, Northwestern University.


Thomas, Barbara, Instructor in English as a Second Language, English Language Institute. B.A. 1968, University of Tennessee; M.Ed. 1980, Wayne State University.

Thomas, Charles Leo, Associate Professor of Education. A.B. 1963, Harris Teachers College; M.A. 1966, St. Louis University; Ph.D. 1971, Johns Hopkins University.


Thomas, Romeo F., Assistant Professor of Mathematics. B.S. 1968, M.S. 1971, University of Baghdad, Iraq; Ph.D. 1979, University of Warwick, Coventry, England.
Thomas, Wayne P., Associate Professor of Education. A.B. 1971, M.Ed. 1972, University of Virginia; Ph.D. 1980, Virginia Polytechnic Institute and State University.

Thompson, Gloria S., Lecturer in Chemistry. B.S. 1951, M.S. 1955, University of Pittsburgh.


Tilles, Lori Sue, Assistant Director of Student Activities. B.S. 1976, James Madison University; M.S. 1983, The American University.

Todd, Ellen Wiley, Assistant Professor of Art. B.A. 1969, Wells College; M.A. 1976, University of Colorado at Boulder; Ph.D. 1986, Stanford University.

Tollison, Robert, Professor of Economics. Ph.D. 1969, University of Virginia.


Torzilli, Albert Phillip, Associate Professor of Biology. B.A. 1967, University of Connecticut; Ph.D. 1976, University of Georgia.

Toth-Allen, Jean, Assistant Professor of Biology. B.S. 1965, College of Saint Vincent; M.S. 1967, Ph.D. 1970, Michigan State University.

Trainor, Mary A., Associate Professor of Nursing. B.S.N. 1964, M.S.N. 1967, Ph.D. 1980, The Catholic University of America.

Treff, James, Robinson Professor of Physics. Ph.D. 1966, Stanford University.


Takui, Nobuko, Associate Professor of English; Associate Professor of American Studies. B.A. 1961, Tsuda College; M.A. 1964, Ph.D. 1967, University of Nebraska.

Tucker, Michael J., Associate Professor of Accounting. B.A. 1969, St. Louis University; M.B.A. 1974, J.D. 1974, New York University; Ph.D. 1980, University of Houston; CPA, State of Arkansas.


Tucker, Susan, Associate Professor of Education. B.A. 1972, Southern Illinois University; M.S. 1974, Southern Illinois University; Ph.D. 1976, St. Louis University.

Tye, Zita Eileen, Professor of Psychology. B.A. 1959, Texas Christian University; Ph.D. 1968, Texas Tech University.


Veil, James D., Associate Professor of Nursing. M.S.N. 1970, Emory University; D.N.Sc. 1980, The Catholic University of America.

Vaiaro-Figuera, Eda, Assistant Professor of Education. B.A. Aurora College; M.A. 1975, Ph.D. 1978, University of Michigan.

Vanberg, Viktor, Associate Professor of Economics. Ph.D. 1981, Universität Mannheim.

Vaughn, Karen I., Associate Professor; Chair, Department of Economics. B.A. 1966, Queens College; M.A. 1969, Ph.D. 1971, Duke University.

Vaught, George M., Lecturer in German; Assistant Director of the Office of International Programs and Services. B.A. 1969, M.A. 1972, University of Texas; Ph.D. 1977, University of Massachusetts.

Verheyen, Egon, Robinson Professor. Ph.D. 1962, University of Wurzburg, Germany.

Ward, Christopher Robert Bruce, Lecturer in English. B.A. 1972, M.A. 1975, George Mason University.


Wagner, Charles R., Associate Professor; Director of Facilities Planning. A.B. 1952, Princeton University.

Wagner, Irmgard, Associate Professor of German. Staatsexamen 1961, Tubingen University, Germany; M.A. 1965, Tufts University; Ph.D. 1970, Harvard University.

Wahl, Otto F., Associate Professor of Psychology. B.A. 1969, Wesleyan University; Ph.D. 1974, University of Pennsylvania.

Walker, Dorothy Jean, Professor of Nursing. B.S.N.E. 1957, Louisiana State University School of Medicine; M.S.N.E 1960, Ph.D. 1966, Saint Louis University; J.D. 1979, Boston College Law School.

Walker, George E., Associate Professor of History; Associate Professor of American Studies. B.A. 1970, Lincoln University; M.A. 1971, M.Phil. 1973, Ph.D. 1975, Columbia University.

Walker, Lois S., Assistant Professor of Nursing. B.S. 1964, Rutgers University; M.S.N. 1970, The Catholic University of America; D.N.Sc. 1984, The Catholic University of America.

Waiochik, George S., Lecturer in Geography. B.S. 1949, Indiana University of Pennsylvania; M.A. 1950, Northwestern University.

Walters, Lawrence, Instructor in English as a Second Language, English Language Institute. B.A. 1964, University of Kentucky; M.A. 1980, University of South Florida.

Wang, George H.K., Lecturer in Decision Sciences. B.S. 1963, Taiwan Chung-Hsing University; M.A. 1969, Northern Illinois University; Ph.D. 1976, Iowa State University.

Wang, Pearl Yun, Assistant Professor of Computer and Information Sciences. B.A. 1971, Wheaton College; M.S. 1973, Ph.D. 1980, University of Wisconsin.


Ward, Nicholas William, Associate Professor of Art. M.F.A. 1971, Maryland College of Art.

Wardlow, Penelope S., Assistant Professor of Accounting. B.A. 1980, Indiana University; Ph.D. 1985, University of Georgia.


Warner, Peggy, Lecturer in English. B.A. 1972, M.A. 1977, Purdue University.

Weber, Jon P., Assistant Professor of Chemistry. B.S. 1974, University of California at Berkeley; Ph.D. 1980, University of California at Santa Cruz.

Webster, Dennis Wayne, Assistant Professor; Assistant Director of Counseling Center. B.A. 1974, Seton Hall University; M.A. 1977, Ph.D. 1982, University of Maryland.

Wechsler, Harry, Professor of Computer Science. B.S. 1971, Tel Aviv University, Israel; M.S. 1973, Weizmann Institute of Science, Israel; Ph.D. 1975, University of California, Irvine.

Wegman, Edward J., Dunn Professor of Information Technology and Applied Statistics. B.S. 1965, St. Louis University; M.S., Ph.D. 1968, University of Iowa.

Weidner, John F., Lecturer in Mathematics. B.A. 1964, Yale University; M.S. 1965, Ph.D. 1973, Purdue University.

Weisman, David Schor, Adjunct Professor of Psychology. B.A. 1971, American University; M.A. 1973, Fairleigh Dickinson University; Ed.D. 1979, Catholic University of America.


Welsh, Taejung Kim, Lecturer in Foreign Languages and Literatures. B.A. 1964, Han Kuk University of Foreign Studies, Korea; M.Ed. 1983, George Mason University.


White, Ralph Edward, Instructor; Men's Track and Field Coach. B.S. 1974, Pennsylvania State University.
Whitney, Scott C., Professor of Law. A.B. 1949, University of Nevada; J.D. 1952, Harvard University.
Whittaker, Alan G., Lecturer in Government and Politics. B.A. 1973, North Texas State University; M.A. 1977, Southern Methodist University; Ph.D. 1983, University of South Carolina.
Wiederhorn, Nancy I., Assistant Professor of Nursing. M.S.N. 1974, D.N.Sc. 1980, The Catholic University of America.
Wilkins, Roger, Robinson Professor of History. A.B. 1953, University of Michigan; LL.B. 1956, University of Michigan Law School.
Williams, Ashley, Lecturer in English. A.B.J. 1968, University of Georgia; M.A. 1987, George Mason University.
Williams, Charles K., Professor of English. B.A. 1959, University of Pennsylvania.
Williams, Joyce Knowles, Assistant Professor of Nursing. B.S. 1960, Brown University, Rhode Island Hospital School of Nursing; M.S. 1963, C.A.G.S. 1965, Boston University.
Williams, Karen Precious, Assistant Professor of Psychology. B.A. 1972, University of Pennsylvania; M.S. 1975, Ph.D. 1979, Florida State University.
Williams, Thomas Rhys, Professor of Anthropology. B.A. 1951, Miami University; M.A. 1956, University of Arizona; Ph.D. 1956, Syracuse University.
Williams, Walter E., John M. Olin Distinguished Professor of Economics. B.A. 1965, California State University; M.A. 1966, Ph.D. 1972, University of California at Los Angeles.
Wilson, John William, III, Associate Professor of Biology. B.A. 1966, Amherst College; Ph.D. 1972, University of Chicago.
Wilson, Novella H., Assistant Professor; Coordinator of Extended Studies Enrollment Program, Division of Continuing Education. B.S. 1959, St. Paul's College; M.Ed. 1980, George Mason University.
Wilson, Patricia A., Instructor; Associate Director of Admissions. B.A. 1970, M.A. 1971, University of Michigan.
Woehrle, Thomas, Lecturer in Business Legal Studies. B.A. 1975, George Mason University; J.D. 1978, Valparaiso University.
Wontgada, Nittaya, Assistant Professor of Marketing. B.A. 1974, Chiang Mai University; M.S. 1979, Northern Illinois University; Ph.D. 1986, University of Tennessee.
Wright, Brett Alan, Assistant Professor of Health and Physical Education. B.A. 1975, M.A. 1976, Morehead State University; Ph.D. 1985, Texas A and M University.
Wyngaard, Grace A., Assistant Professor of Biology. B.S. 1976, University of Rhode Island; M.S. 1979, University of South Florida; Ph.D. 1983, University of Maryland.
Wyyn, Louise, Lecturer in English. B.A. 1971, University of Illinois; M.A. 1985, George Mason University.
Yocum, Margaret Rose, Associate Professor of English; Associate Professor of American Studies. B.A. 1970, Pennsylvania State University; M.A. 1972, Ph.D. 1980, University of Massachusetts.
Young, Margaret Ruth, Assistant Professor of Decision Sciences. B.S. 1975, Bates College; M.S. 1982, Vanderbilt University; Ph.D. 1985, Pennsylvania State University.
Zahra, Shaker A., Associate Professor of Strategic Management. B. Com. 1975, Alazhar University; M.B.A. 1978, National University; Ph.D. 1982, University of Mississippi.
Zaphiriou, George A., Professor of Law. LL.B. 1940, University of Athens, Greece; LL.M. 1950, University of London.
Zielinski, Gregory, Assistant Professor of Geology. B.S. 1977, Pennsylvania State University; M.S. 1980, Idaho State University; Ph.D. 1987, University of Massachusetts.
Zietz, Isidore, Adjunct Professor of Geology. B.S. 1939, M.S. 1940, City College of New York; Ph.D. 1976, Catholic University.
Zoltek, Stanley Michael, Associate Professor of Mathematics. B.S. 1970, St. John's University; M.A. 1973, Ph.D. 1976, State University of New York at Stony Brook.
Campus Map, Telephone Directory, and Index
Telephone Directory

The general information number for George Mason University is (703) 323-2000. The University exchange is “323” except where indicated.

Academic Affairs, Vice President .......................... 2654
203 Finley Building
Academic Advising Center ................................. 2413
348 Student Union I
Academic Computing Services .............................. 2941
27 Thompson Hall
Accounting/Business Legal Studies Department .... 2752
4634 Robinson Hall
Administration, Senior Vice President ............... 3545
205 Finley Building
Administrative Information Systems ................. 2154
27 Thompson Hall
Admissions .................................................. 2107
100 Finley Building
Law, Metro Campus ........................................ 841-2667
Affirmative Action/EEO ................................. 2519
205 Finley Building
Alumni Relations .......................................... 2136
4502 Roberts Road
American Studies ........................................ 2872
4535 Robinson Hall
Art Department ............................................. 2076
1110 Robinson Hall
Athletic Director ............................................ 3462
103-A Field House
Biology Department ....................................... 2181
3005 Academic III
Bookstore .................................................... 2696
Student Union II
Campus Ministry ........................................... 2160
207 Student Union I
Campus Police — Main Campus ........................ 2158/2159
Trailers 103-107
Metro Campus ............................................. 841-2669
Career Services ............................................. 2476/2535
348 Student Union I
Cashier ......................................................... 2119
106 Krug Hall
Chemistry Department ..................................... 4327
240 Krug Hall
Communication Department ............................. 3575
135 Thompson Hall
Composition Tutorial Center ............................ 2700
4506 Robinson Hall
Computer Science Department ......................... 2713
303 Science and Technology Building
Computing and Information Systems, University .... 3050
206 Finley Building
Continuing Education ...................................... 2436
132 East Building
Cooperative Education .................................... 2536
348 Student Union I
Counseling Center ........................................ 2165
364 Student Union I
Curriculum and Instruction Department ............... 6086
3307 Robinson Hall
Dean, College of Arts and Sciences .................... 764-6186
206 Thompson Hall
Dean, College of Education and Human Services ... 2400
2237 Robinson Hall
Dean, Division of Continuing Education ............... 2341
204 East Building
Dean, Graduate School ................................ 2123
102 Finley Building
Dean, School of Business Administration ............ 2760
4610 Robinson Hall
Dean, School of Information Technology and Engineering .... 2939
103 Science and Technology Building
Dean, School of Nursing ................................ 2446
3350 Robinson Hall
Decision Sciences Department .......................... 2758
4661 Robinson Hall
Disabled Student Services ............................... 2413
345 Student Union I
Economics Department .................................. 2344
3655 Robinson Hall
Educational Leadership and Human Development Department .... 764-6103
3334 Robinson Hall
Electrical and Computer Engineering .................. 2302
2067 Academic III
English Department ....................................... 2221
4565 Robinson Hall
Finance and Planning, Vice President ............... 2114
201 Finley Building
Finance Department ....................................... 2756
4639 Robinson Hall
Financial Planning and Resources .................... 2176
354 Student Union I
Food Service ................................................ 2047
2014 Student Union II
Foreign Languages and Literatures Department .... 2231
231 Thompson Hall
Geology Department ...................................... 2260
2080 Academic III
Governmental Affairs .................................... 2709
211 Finley Building
Health, Sport, and Leisure Studies Department .... 2322/2829
204 Physical Education Building I
History Department ........................................ 2242
2523 Fenwick
Honor Committee .......................................... 2195
250 Student Union I
Housing and Residential Life ............................ 2354
310 Student Union I
Information ................................................ 2374
Student Union I
Student Union II ......................................... 3894
Switchboard, Finley Building ............................ 2000
Institute for Humane Studies .......................... 1055
Tallwood House, 4210 Roberts Road
Institutional Planning and Research ................... 2132
201 Krug Hall
International Student Services ......................... 3574
304 Student Union I
Library — Fenwick ....................................... 2393
Library — Law, Metro Campus ......................... 841-2652
Management Department ................................ 2750
4635 Robinson Hall

http://catalog.gmu.edu
Index

Absence from final examinations, 39
Academic
advising, 38
calendar, 5
good standing, 41
load, 34
period, duration of, 40
probation, 40
requirements, 42
standing, 41
suspension, 40
warning, 40
Academic Advising Center, 38
Academic Affairs
courses: UNIV, 216
Academic good standing, athletic, 17
Academic testing, 24
Accompanying
B.M. concentration, 83
Accounting and Business Legal Studies, 101
courses:
ACCT, 146
BULE, 154
faculty, 101
major in accounting, 101
Accreditation, 13
Acting, emphasis in theatre B.F.A., 87
Activities
athletic, 17
performing arts, 18
student, 17
Activity courses, 51, 201
Administration, University, 222
Admission
and extended studies enrollment, 23
and summer session enrollment, 23
Bachelor of Individualized Study (B.I.S.), 131
computer science, 107
concurrent enrollment, 22
eyear admission, 21
eyear decision, 21
international students, 22
junior standing, nursing deadlines, 114
notice of acceptance, 24
policies, 21
procedures, 24
requirements, freshman, 21
requirements, transfer, 22
right to withdraw offer, 24
social work, 128
student teaching, 118
teacher education program, 117
test requirements, 24
Admissions committee, 24

Marketing Department .................................... 2754
4647 Robinson Hall
Mathematical Sciences Department .......................... 2577
Chesapeake Module
Metro Campus Professional Center .......................... 841-2604
Minority Student Services ................................ 2383
352 Student Union I
Nursing Program ............................................ 2446
3350 Robinson Hall
PAGE Office ................................................ 2044
222 Thompson Hall
Performing Arts Department ............................... 764-6200
417 Humanities Building
Personnel Office ............................................. 2111
212 Krug Hall
Philosophy and Religious Studies Department ............ 2252
3548 Fenwick
Physics Department ......................................... 2303
142 West Building
Placement ..................................................... 2535
348 Student Union I
President ...................................................... 2120
208 Finley Building
Psychology Department .................................... 2203/2204
2003 Academic III
Public Affairs Department .................................. 2272/2273
2203 Robinson Hall
Public Relations .............................................. 2138
214 Finley Building
Registrar ...................................................... 2141
Krug Hall
ROTC ................................................................ 3768
Field House Module
Senior Vice President ....................................... 3545
205 Finley Building
Social Work Department ..................................... 2910
3537 Fenwick
Sociology and Anthropology Department .................. 2900
3603 Robinson Hall
Student Activities ............................................ 2574
305 Student Union I
Student Government ........................................ 2196
252 Student Union I
Student Health Service ..................................... 2584
232 Student Union I
Student Publications ....................................... 2481/2168/3730
By George! (yearbook), 254 Student Union I
Broadside (newspaper), 253 Student Union I
Phoebe (literary magazine), 255 Student Union I
Student Services ............................................. 2522
302 Student Union I
Summer Session .............................................. 2300
129 East Building
Testing Center ................................................ 2525
117 Finley Building
Tutorial Services ............................................. 2018
350 Student Union I
University Development ................................... 2443
4520 Roberts Road
Veterans Services .......................................... 2381
354 Student Union I
Writing Center .............................................. 2700
4506 Robinson Hall
Advanced placement examinations, 24
Advanced placement program with credit, 24
Adviser's permission to register, 34
Advising
academic, 38
ing engineering students, 109
Advising upon entrance into the upper division, 38
Air Force ROTC, 31
Alumni Association, Student, 19
American Studies, 52
B.A. degree requirements, 52
courses: AMST, 146
faculty, 52
in a double major, 52
Anthropology, 96
B.A. degree requirements, 96
courses: ANTH, 147
Appeal of grade, 40
Application for degree, 42
Applied archaeology, certificate program, 137
Applied anthropology, concentration within anthropology B.A., 96
Applied Statistics
courses: STAT, 214
operations research and, 111
Applied solid state physics, concentration in physics B.S., 90
Arabic courses: ARAB, 148
Archaeology
courses: ANTH, 147
concentration in anthropology B.A., 96
Architecture courses: ARTH, 148
Area Studies
Asian, 53
courses:
ASST, 151
EUST, 174
LAS, 190
MEST, 193
RUSS, 208
European, 54
Latin American, 56
Middle East, 56
Russian, 57
Army ROTC, 31
Art
B.A. degree requirements, 58
courses:
ARTH, 148
ARTS, 150
faculty, 58
Arts and Sciences, College of
administration, 48
departments and programs, 48
Asian Studies
courses: ASST, 151
faculty, 53
Astronomy courses: ASTR, 151
Astrophysics, concentration within Physics B.S., 90
Athletic activities, 17
Attendance policies, 39
Auditing a course, 36
Awards, 19
BA/SIC (Bachelor of Arts and Sciences Integrated Curriculum)
academic policies and procedures, 60
course: BASC, 151
faculty, 60
Baccalaureate degree requirements, 41
Bachelor of Arts degree requirements, 48
Bachelor of Fine Arts degree requirements, 50
Bachelor of Individualized Study (B.I.S.)
application and acceptance, 132
B.I.S. degree requirements, 132
course: BIS, 151
course work at consortium institutions, 133
eligibility, 132
Bachelor of Music degree requirements, 50
Bachelor of Science degree requirements, 49
Bachelor of Science degree requirements within the School of Information Technology and Engineering, 107
Bicycles, 220
Bilingual/Multicultural Education, 119
Biology
B.A. degree requirements, 61
B.S. degree requirements, 61
clubs and societies, 63
courses:
BIOL, 151
MTCH, 193
environmental management, certificate program, 62, 139
faculty, 61
for nonmajors, 62
PAGE students, 62
Black Peer Program, 16
Business Administration
courses:
ACCT, 146
BULE, 154
DESC, 161
FNAN, 175
INFS, 189
MGMT, 190
MKTG, 191
Business Administration, School of acceptance into, 100
B.S. degree requirements, 99
Business Legal Studies
courses: BULE, 154
faculty, 101
Calendar, 5
Campus map, 247
Campus ministry, 17
Canadian Studies
certificate program, 137
course: CAST, 154
Canceling registration, 35
Career Resource Library, 16
Career Services, 16, 223
Cartography
certificate program, 138
courses:
GECA, 177
GEOG, 178
Catalogs
and changed requirements, 42
other institutions, 36
University, prior years, 42
Certificates and University Courses, 137
Certificate Programs
Applied Archaeology, 137
Canadian Studies, 137
Cartography, 138
Earth Science Teaching, 138
Environmental Management, 139
Geochemistry, 139
Geoscience Programming, 139
Gerontology, 140
listed, 3
Psychology Technician, 140
Real Estate and Urban Development, 141
Certification in athletic training, 124
Certification to Teach Music, Virginia, 86
Change of status and address, 35
Checks, 29
Chemistry
accreditation, 64
B.A. degree requirements, 64
courses: CHEM, 154
faculty, 64
requirement for education majors, 64
requirement for nursing majors, 65
Chinese courses: CHIN, 155
CLEP, 25
Classical studies
B.A. degree requirements, 66
courses: CLAS, 156
faculty, 66
Classification of students, 40
College Level Examination Program (CLEP), 25
College of Arts and Sciences. See Arts and Sciences, College of
College of Education and Human Services. See Education and Human Services, College of
Commencement, 43
Commercial recreation option within Parks, Recreation, and Leisure Studies, 127
Communication, 67
B.A. degree requirements (major in speech communication), 67
courses: COMM, 156
faculty, 67
Community Services, 134
Comparative Literature, 69
courses: CL, 159
Composition, B.M. concentration, 83
Composition Tutorial Center, 41
Computational physics concentration within Physics B.S., 90
Computer Science
admission, 107
B.S. degree requirements, 108
courses:
CS, 159
for nonmajors, 108
faculty, 107
Computing system and services, 12
Conduct, 219
Conference Center, 12
Confidentiality and client welfare, 16
Consortium for Continuing Higher Education in Northern Virginia, 133
Continuing Education, Division of administration, 130
community services, 134
nursing noncredit courses, 134
programs and services, 130
Continuing Education Units (CEUs), 134
Continuous registration, 35
Contract courses, 134
Cooperative Education, 16
Core requirements, all baccalaureate degrees, 42
Counseling Center services, 16
Course computer names, 144
Course descriptions, 144
Course numbering, 145
Credit
advanced placement program, 24
and grading, 39
by examination, 24
earned at nonaccredited colleges, 26
earned at other institutions, 26
extended studies applicable to degree, 131
nontraditional, in B.I.S., 132
off-campus instruction, 133
transfer, 25
Curriculum and Instruction
faculty, 117
Teacher Education Program, 117
Dance
B.A. degree requirements, 81
B.F.A. degree requirements, 81
courses: DANC, 160
Dean's list, 40
Debate team, 18
Decision Sciences
courses: DESC, 161
faculty, 102
Deferred payment plan, 28
Degree programs listed, 2
Degree requirements
academic, 42
all baccalaureate degrees, 41
Bachelor of Arts, 48
Bachelor of Fine Arts, 50
Bachelor of Music, 50
Bachelor of Science, in College of Arts and Sciences, 49
catalog choice, 42
English composition, 42
literacy, 41
residence, 42
Dental plan, 15
Design/Theatre Technology, as emphasis within theatre B.F.A., 87
Disabled persons services, 15
Dismissal, 41
Division of Continuing Education. See Continuing Education, Division of
Domicile
change of, 29
for in-state tuition rates, 28
Drama courses: THR, 215
Dropping a course, 35
Drug and alcohol policy, 219
Early Education
B.S.Ed. degree requirements, 118
teacher education program, 117
Early registration, 34
Earth Science Teaching, certificate program, 138
Economics
B.A. degree requirements, 68
B.S. degree requirements, 68
courses: ECON, 162
faculty, 68
Education
accreditation, 117
B.S.Ed. degree requirements, 118
early education, 118
middle education, 118
physical education, 123
courses:
EDCI, 167
EDUC, 163
HEAL, 184
MUSI, 193
PHED, 201
health, 125
teacher programs, 117
Education and Human Services, College of
academic policies, 116
administration, 223
degree requirements, 116

Electrical and Computer Engineering
B.S. degree requirements (major in Electronics Engineering), 109
courses:
ECE, 168
PHYS, 203
faculty, 109

Electron Microscopy Laboratory, 64
Electronics, concentration in physics B.S., 90
Electronics Engineering
accreditation, 109
B.S. degree requirements, 109

Elementary/Secondary Education courses: EDCI, 167

Emergency loan program, 31

Engineering
computer, 109
courses: ENGR, 170
electrical, 109
electronics, 109
other, 109

English
B.A. degree requirements
English-philosophy double major, 69
literature program, 69
writing program, 69
courses: ENGL, 170
faculty, 69
in a double major, 69

English Composition Requirement, 42

Enrollment
Extended Studies, 23,130
Guest Matriculant, 23,131
in graduate courses by undergraduates, 23
senior citizens, 23

Environmental management, certificate program, 139

European Studies, 54
B.A. degree requirements (major in Area Studies), 54
courses: EUST, 174
faculty, 54

Evening program, 131
Examinations
advanced placement, 24
comprehensive, 43
final, 39

EXCEL, Summer Program, 23
Experiential learning, 133
Extended Studies Enrollment, 23,130
Facilities, 12
Failure to meet financial obligations, 29
Final examinations policies, 39
Finance
faculty, 103
courses: FNAN, 175

Financial assistance, 30
emergency loans, 31
federal programs, 30
office, 30
Veterans Benefits, 32
Virginia State Programs, 31
war orphans, 32
Financial suspension, 29

Firearms, 220

Foreign Languages and Literatures
B.A. degree requirements
comparative literature option, 71
French, 71

German, 72
Spanish, 72
courses:
ARAB, 148
CHIN, 155
CLAS, 156
FREN, 176
FRLN, 175
GERM, 181
GREE, 184
HEBR, 185
ITAL, 189
JAPA, 189
KORE, 189
LATN, 189
PORT, 204
RUSS, 208
SPAN, 212
VIET, 217
faculty, 71
general aims and guidelines, 71
Foreign language courses: FRLN, 175
Foreign language placement, 25
Forensics team, 18

French
B.A. degree requirements, 71
courses: FREN, 176
Freshman admission requirements, 21
General Business Administration, 99
General education requirements, Secondary Teacher Certification, 121

Geochemistry, certificate program, 139
Geographic and Cartographic Sciences
courses: GECA, 177

Geography
B.A. Degree, 94
courses: GEOG, 178

Geology
B.S. degree requirements, 73
courses: GEOL, 179
faculty, 73
George Mason University Alumni Association, 19
George Mason University Press, 12

Geoscience Programming, certificate program, 139

German
B.A. degree requirements, 72
courses: GERM, 181

Gerontology
certificate programs, 140
courses:
EDUC, 163
NURS, 196
PHED, 201
PRLS, 198
PSYC, 205
SOCI, 210

GMAT, 9
Good academic standing, 41

Government and Politics
B.A. degree requirements, 94
courses: GOVT, 182
GRE, 9
Grade point average, 39
Grade reports, 40
Grading policies, 39
Graduate course enrollment by undergraduates, 23
Graduate School Preparatory, concentration within
Physics B.S., 90
Graduate academic policies and procedures, 43
Graduate School, 2,223
Graduation
Graduation Appeals Committee
Graduation with Distinction
Graduation with Recognition
Greek courses: GREE
Guest matriculant enrollment
Handicapped services
Harris Theatre
Health Education
Health Insurance and Dental Plan
Health Service, Student
Health, Sport, and Leisure Studies
Hebrew courses: HEBR
History
B.A. degree requirements
courses: HIST, LAC
faculty
Holbert L. Harris Theatre
Honor code
Housing
Identity card
Industrial Arts
Information Resource Management
Information Systems and Systems Engineering
Information Systems courses: INFS
Information Technology and Engineering School of
Installment Payment Plan
Interdisciplinary courses
International students
admission of
in computer science
International Student Services
International Studies
B.A. degree requirements
courses: GOVT
Internships
Inservice education
In-State Tuition
Italian courses: ITAL
Japanese courses: JAPA
Journalism courses: COMM
Junior standing, acceptance into, in nursing
Knowledge of University policies
Korean courses: KORE
Laboratory Sciences, courses:
ASTR, BIOL, GEOL, PHYS
Latin American Studies
B.A. degree requirements (major in Area Studies)
courses: LAS
faculty
Latin courses: LATN
Law, courses:
GOVT
Law, School of
Law Enforcement
B.S. degree requirements
courses: GOVT
Libraries
Literacy
Literature courses:
CLAS, ENGL, FREN, GERM, KORE, RUSS, SPAN, VIET
Literature program in English
Loans, emergency
Loans and grants
Logic courses: PHIL
LSAT
MAT
Major
declaration of
selection time
undergraduate
Management
courses: MGMT
faculty
major requirements
Marketing
courses: MKTG
faculty
major requirements
Mathematical Sciences
B.A. degree requirements (major in mathematics)
B.S. degree requirements (major in mathematics)
faculty
Mathematics
B.A. degree requirements
B.S. degree requirements
courses: MATH
courses for nonmajors
MCAT
Medical Sciences Advisory Committee
Medical Technology
B.S. degree requirements
courses: MTCH
Mental Health
Metro Campus Professional and Conference Center
Middle East Studies
courses: MEST
Minority Student Services
Motor vehicles policy
Music
applied music faculty
audition required for major
B.A. degree requirements
B.M. concentrations
B.M. degree requirements
courses: MUSI
Music Education, B.M. concentration
Music History and Literature, B.M. concentration
National Teacher Examination
Nontraditional
degree program (B.I.S.), 132
modes of learning, 133

Nursing
additional grade standards, 114
B.S.N. degree requirements, 113
chemistry requirement, 65
continuing education program, 134
courses: NURS, 196
faculty, 114
junior standing in nursing, 114
noncredit courses, 134
School of, 113

Off-campus credit instruction, 133
Operations Research and
Applied
Statistics
courses:
OR, 198
STAT, 214

Operations Research courses:
OR, 198

Organizations, student, 18

PAGE
biology majors, 62
courses: PAGE, 198
equivalencies to traditional programs, 50
faculty, 77
general education requirements, 50
transferring to other universities, 78
unique policies and procedures, 78

Parks, Recreation and Leisure Studies, 126
B.S. degree requirements, 126
courses: PRLS, 198
options, 126

Park resources, option within parks, recreation, and
leisure studies B.S., 126

Penalties, 29

Performance, B.M. concentration, 82
Performing Arts, 79
activities, 18
applied music faculty, 79
B.M. degree requirements, 82
courses:
DANC, 160
MUSI, 193
THR, 215
dance
auditions required for B.F.A., 81
B.F.A. degree requirements, 81
faculty, 79
music
audition required for major, 82
B.A. degree requirements, 82
B.M. concentrations, 82
theatre
B.A. degree requirements, 86
B.F.A. degree requirements, 86
B.F.A. emphases, 86

Pets, 220

Philosophy
B.A. degree requirements, 88
philosophy-English double major, 89
religious studies track in philosophy major, 88
traditional philosophy major, 88
courses: PHIL, 199

Ph.D. in Philosophy, 199

Philosophy and Religious Studies, 88
courses:
PHIL, 199
RELI, 207
faculty, 88

Physical Education, 123
B.S. in Education, with a major in Physical
Education, 123
courses: PHED, 201

Physics
B.A. degree requirements, 90
B.S. degree requirements, 90
courses:
ASTR, 151
for majors, 91
for nonmajors, 90
PHYS, 203
faculty, 90

Plan for Alternative General Education (PAGE). See
PAGE

Policies and procedures
academic advising, 38
academic load, 34
attendance, 39
final examinations, 39
grade point average, 39
grading, 39
graduate, 43
academic, 38
PAGE, 78
student responsibility for knowledge of, 43
undergraduate, 21
unique to PAGE, 78

Portuguese courses: PORT, 204
Pre-Dental students, 62
Pre-Medical students, 62
Pre-Veterinary students, 62
Privacy of student information, 34
Privacy of student records, 34
Private music instruction, courses: MUSI, 193
Probation, 40
Professional awareness programs, 134
Proficiency examinations, 24
Programs, 2
Psychology
B.A. degree requirements, 91
B.S. degree requirements, 91
B.S. specialty (cognate) areas, 92
certificate program for psychology technicians, 140
courses: PSYC, 205
faculty, 91

Public Administration,
B.S. degree requirements, 95
courses:
GOVT, 182
PUAD, 206

Public Affairs
B.A. degree requirements
government and politics, 94
government and politics, 94
international studies, 94
B.S. degree requirements
law enforcement, 95
public administration, 95
cartography, certificate program, 138
courses:
CAST, 154
GECA, 177
GEOG, 178
GOVT, 182
PUAD, 206
faculty, 93

Quantitative methods concentration, 102

Real Estate and Urban Development
certificate program, 141
Recreational services, option within parks,
recreation, and leisure studies B.S., 127
Re-Entry Program, 16

http://catalog.gmu.edu
Veterans educational benefits, 32
Veterans services, 16
Vietnamese courses: VIET, 217
Virginia Certification to Teach Music, 80
Visiting the Campuses, 12
Warning, 40
Withdrawal, 35
Writing program in English, 69
Please send an application for admission to:

Name ____________________________

Address ___________________________

City / State / Zip ____________________

Telephone __________________________

Please list high school or college if currently enrolled _____________________________

Grade or class rank ____________________

To receive an application for admission, please write or call:

Admissions Office
117 Finley Building
4400 University Drive
Fairfax, Virginia 22030-4444
(703) 323-2100

http://catalog.gmu.edu