OLD DOMINION UNIVERSITY CATALOG
VOLUME LXIII, NO. 1

CATALOG ISSUE 2003-2004
ANNOUNCEMENTS 2004-05 and 2005-2006

Hampton Boulevard
Norfolk, Virginia 23529

http://www.odu.edu

Issued by the Office of Academic Affairs
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**NATURE OF ANNOUNCEMENTS.** Announcements contained in this publication are subject to change without notice and may not be regarded in the nature of binding obligations to the University. The University reserves the right to change any provisions or requirements. Only the Provost or designee can approve changes to the Catalog except where otherwise stated within.

When students matriculate with Old Dominion University, they come under the academic requirements of the edition of the University Catalog at that time. Students may graduate under these academic requirements within a period of six years (undergraduate and master’s degree students) or eight years (doctoral students) even though subsequent Catalogs may change. Academic requirements include competency requirements, general education requirements, grade point average requirements, major and minor course requirements, foreign language requirements, overall unit requirements and related curriculum matters. Grading practices, tuition, fees and other matters are not considered to be “academic requirements” and are subject to change at the discretion of the University.

Should new changes be to their advantage, undergraduate students may graduate under the conditions of the newer catalog. Graduate students must have permission of the graduate program and dean to select a newer catalog. However, because academic programs are subject to requirements imposed by outside accrediting or certifying agencies, the Commonwealth of Virginia, and the United States of America, such outside requirements take precedence.

Old Dominion University is committed to policies that assure that there is no discrimination on the basis of age, sex, race, color, religion, national origin, veteran status, political affiliation, handicap, or sexual orientation. Old Dominion University complies with the Family Rights and Privacy Act of 1974 (as amended).

The University is an Affirmative Action Equal Opportunity employer.

**STUDENT RESPONSIBILITY FOR CATALOG INFORMATION.** Students are held individually responsible for the information contained in the University Catalog. Failure to read and comply with University regulations will not exempt students from whatever penalties they may incur.
## Academic Calendar

### First Semester 2004-05

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>August 28 (Saturday)</td>
<td>Classes begin</td>
</tr>
<tr>
<td>September 6 (Monday)</td>
<td>Labor Day Holiday</td>
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<tr>
<td>October 9-12 (Sat-Tues)</td>
<td>Fall Holiday</td>
</tr>
<tr>
<td>October 26 (Tuesday)</td>
<td>Last day to withdraw from classes</td>
</tr>
<tr>
<td>November 24-28 (Wed-Sun)</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>December 10 (Friday)</td>
<td>Classes end</td>
</tr>
<tr>
<td>December 11 (Saturday)</td>
<td>Exams begin</td>
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<tr>
<td>December 18 (Saturday)</td>
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<tr>
<td>December 19 (Sunday)</td>
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### Second Semester 2004-05

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>January 8 (Saturday)</td>
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<tr>
<td>January 15-17 (Sat-Mon)</td>
<td>Martin Luther King, Jr. Holiday</td>
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<tr>
<td>March 7-12 (Mon-Sat)</td>
<td>Spring Holiday</td>
</tr>
<tr>
<td>March 15 (Tuesday)</td>
<td>Last day to withdraw from classes</td>
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<tr>
<td>March 27 (Sunday)</td>
<td>Easter – no classes held</td>
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<tr>
<td>April 26 (Tuesday)</td>
<td>Classes end</td>
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<tr>
<td>April 27 (Wednesday)</td>
<td>Reading Day</td>
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<tr>
<td>April 28 (Thursday)</td>
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<tr>
<td>May 5 (Thursday)</td>
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### Summer 2005*

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<thead>
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<tr>
<td>May 9 (Monday)</td>
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<tr>
<td>May 16 (Monday)</td>
<td>Session 2 Classes Begin</td>
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<td>May 30 (Monday)</td>
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<tr>
<td>May 31 (Tuesday)</td>
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<td>June 26 (Sunday)</td>
<td>Session 1, 2, &amp; 4 Classes End</td>
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<tr>
<td>June 27 (Monday)</td>
<td>Session 5, 6, &amp; 7 Classes Begin</td>
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<td>July 4 (Monday)</td>
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<tr>
<td>July 24 (Sunday)</td>
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<td>August 7 (Sunday)</td>
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<td>October 8-11 (Sat-Tues)</td>
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<td>October 25 (Tuesday)</td>
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<tr>
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### Second Semester 2005-06

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<tr>
<td>August 13 (Sunday)</td>
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*Summer session dates are being reevaluated and are subject to change.
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<td>May 5 (Saturday)</td>
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<tr>
<td><strong>Classes begin</strong></td>
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<tr>
<td><strong>Martin Luther King, Jr. Holiday</strong></td>
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<tr>
<td><strong>Spring Holiday</strong></td>
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<tr>
<td><strong>Last day to withdraw from classes</strong></td>
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<td><strong>Session 1 &amp; 3 Classes Begin</strong></td>
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<tr>
<td><strong>Session 2 Classes Begin</strong></td>
<td><strong>Session 2 Classes Begin</strong></td>
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<td><strong>Holiday – No Classes</strong></td>
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<td><strong>Session 1, 2, &amp; 4 Classes End</strong></td>
<td><strong>Session 1, 2, &amp; 4 Classes End</strong></td>
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<td><strong>Session 5, 6, &amp; 7 Classes Begin</strong></td>
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<td><strong>Session 7 Classes End</strong></td>
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Old Dominion University

History

Old Dominion University began its tradition of excellence when it was founded in 1930 by the College of William and Mary, the second oldest university in the United States. Established originally as a feeder school for William and Mary in Williamsburg, Virginia and Virginia Polytechnic Institute in Blacksburg, Virginia, Old Dominion began educating teachers and engineers. The two-year school rapidly evolved into a full four-year college, and was granted independence in 1962 as Old Dominion College.

Considerable growth in enrollment, the expansion of research facilities and preparation for the addition of graduate programs led the Board to approve the name change to Old Dominion University. Now Old Dominion is a powerhouse for higher education with six colleges: The College of Arts and Letters, The College of Business and Public Administration, The Darden College of Education, The Frank Batten College of Engineering and Technology, The College of Health Sciences and The College of Sciences. Old Dominion has been offering master's degrees since 1964 and Ph.D.s since 1971. Students currently choose from 67 baccalaureate programs, 68 master's programs, two education specialist programs and 26 doctoral programs.*

Proud of its past, Old Dominion constantly looks to the future and prides itself on its constantly expanding research and teaching programs which grow in quality and in extent daily. A constantly evolving university, Old Dominion is an agent of change for its students, for the region and the nation it serves with dedication. Old Dominion's motto, Portal to New Worlds, is particularly apt in describing a university which opens doors of discovery to new knowledge, ancient wisdom, the most modern science and cutting-edge technology, and the civic and cultural understanding needed by the leaders of tomorrow.

Students

The students at Old Dominion share a special sense of excitement derived in part from the rich tapestry of backgrounds, cultures and ages represented here. Our students hail from all 50 states and more than 100 countries. Studying in this multicultural, international environment, and taking advantage of our guaranteed internship program, offers graduates a true edge as they compete for jobs out in the “real world.”

Among ODU's outstanding students in recent years are a Rhodes Scholar, Truman Scholar and three USA Today Academic All-Americans, as well as the first undergraduate in the commonwealth of Virginia to earn a patent. The University’s alumni ranks include an Emmy Award-winning television producer, astronaut, the commander of the U.S. Navy’s Atlantic Fleet, the chief of surgery at Walter Reed Army Medical Center, award-winning authors, engineers and scientists, and professional coaches and athletes.

More than 14,000 undergraduates and 6,600 graduate students comprise the Old Dominion student body. Residence halls and apartments on campus house 2,350 students, while another 6,000 live nearby within walking distance of the campus. Another 4,000 are distance learners, located throughout Virginia and other states - even on ships at sea - who rarely ever set foot on the campus. A significant percentage of students are in some way connected to the military.

Students in search of extracurricular activities don't have far to look. The University boasts more than 180 student clubs and organizations, from the Academic Honors Association to Zeta Tau Alpha sorority. The Office of Student Activities and Leadership (OSAL) sponsors a wide variety of programs which complements academic excellence, offers a supportive environment, engages students in various learning experiences and provides them with opportunities to interact with a diversity of groups and individuals. OSAL is primarily responsible for commuter services, clubs and organizations, Greek-letter organizations, leadership programs, service and volunteerism, and weekend activities.

*As of the 2004 fall semester.
The Campus and Region

Situated on 188 acres near downtown Norfolk, the ODU campus stretches from the Elizabeth River to the Lafayette River, and watching sunsets on the water is a natural pastime for our students. With its garden areas, reflecting pools and spacious green lawns bordered by tree-lined walkways, it’s a campus that offers the best of both worlds – a beautiful setting and just minutes away from the center of Hampton Roads’ largest cities.

One of the most exciting developments on the campus today is the University Village, with its impressive centerpiece, the Ted Constant Convocation Center, which opened its doors in fall 2002 and hosts everything from basketball games to concerts to commencements. The 75-acre development at the east end of campus is in its infancy, but already is home to 960 modern student apartments. A variety of restaurants and shops are scheduled to open in fall 2004, to be followed by a hotel, grocery store/shopping center, academic and research facilities, and additional retail stores.

On the main campus, at the west end of the grassy, five-acre Kaufman Mall, lies Webb University Center, a spacious facility that dazzles with its two-story glass windows, creating an outdoor ambience and providing a sunny home - in any season - for student life. A stroll along the brick sidewalks of the Williamsburg Lawn, with its towering willow oak trees, offers students and visitors a trip back in time to the beginnings of the University.

A broad array of cutting-edge facilities creates a campus that’s ideal for the pursuit of many majors. Among these are the fully automated Perry Library, with more than 2.8 million items, state-of-the-art laboratories in the sciences and engineering, and the new Engineering and Computational Sciences Building. The campus is also home to Prellow Planetarium, the Lions Child Study Center, superior facilities for clinical work in the health sciences, a modern Oceanography and Physical Sciences Building; the Gornto TELETECHNET Center and the Diehn Fine and Performing Arts Center. The campus boasts a variety of indoor and outdoor sports facilities, including two swimming pools.

Only 20 miles from the sand and surf of Virginia Beach and just 40 miles from historic Williamsburg, ODU’s Norfolk campus offers an attractive location for study and leisure. Prospective students and families are welcomed on campus Monday through Saturday throughout the year.

Faculty

Approximately 600 full-time and 300 part-time faculty bring a wealth of talent to our classrooms each day. Their lively, provocative teaching, research and applied experience, along with their commitment to academic excellence, combine to make the Old Dominion experience a rewarding one for students.

Many of our faculty have been recognized on the state and national levels with awards for teaching, research and service. The University boasts three Virginia Scientists of the Year, and ODU faculty have captured more State Council of Higher for Virginia Outstanding Teaching Awards (15) than any other public or private institution in Virginia since 1990, with the exception of William and Mary. Among our faculty ranks you will find nationally and internationally recognized scientists, engineers, educators and authors.

Faculty also serve as the primary academic advisers to our students, beginning in the freshman year. These relationships offer a special opportunity for new students to understand their chosen majors from the perspective of extensive experience and insight that only a professor can offer.

Because of our location and our relationship with dozens of corporations, federal facilities, the armed services, health care services and the tourist industry, faculty at Old Dominion bring a real-world, problem-solving focus to the classroom that makes learning come to life.

A Global Vision

Old Dominion University has made an extraordinary commitment to be recognized as a globally focused institution. This commitment is reflected in a series of recent innovations including:

- The Council on International Initiatives, a campus-wide faculty body that oversees Old Dominion University’s internationalization
- ICAP, adding a global dimension to the University’s innovative Career Advantage Program
- Presidential Global Scholarships, a unique scholarship program of four-year support for global opportunities
- International Student Leadership Awards, providing awards for outstanding leadership and academic achievement to Old Dominion’s diverse international student community
- Provost Award for Leadership in International Education, recognizing faculty leadership in program innovation
- Global Forum, an annual focus on a country or region featuring global policy makers and world-class scholars
- Dean’s Education Abroad Awards, expanding financial support to bring study abroad within reach for more undergraduates
- The Office of International Programs, a comprehensive support office that facilitates continued global exploration and innovation

For more information visit www.odu.edu/international.

Outside the Classroom

Clubs for nearly every interest—more than 200 in all—thrive at Old Dominion, nurturing the personal and social development that is essential to the University experience. Clubs for every college and most majors, sororities and fraternities, an Honor Council, Student Government, Student Activities Council, and numerous recreational sports teams and athletic clubs make it easy to get involved at Old Dominion. In addition, ROTC programs are available for the Navy, Army and Marine Corps.

The benefits and rewards of joining one or more student organizations vary depending on you! Some of the best reasons for getting involved are making new friends, leadership development, exploring careers and gaining that Monarch Pride!

Sixteen NCAA Division I sports bring pride and spirit to campus life each year, and Old Dominion Monarchs have won 31 team and individual national titles, including four in basketball, nine in field hockey and 14 in
The Mission of the University

BACKGROUND

Old Dominion University is located in Hampton Roads, one of the world’s major seaports. Since the early seventeenth century, Hampton Roads has been the state’s gateway to the rest of the world and the world’s gateway to Virginia in commerce and industry, in recreation and culture, and in national security. Now a complex of seven major cities, it is a microcosm of the opportunities and challenges of contemporary urban America. It is also a major center for research and development and a home for extensive scientific and technological activities in marine science, aerospace, ship design and construction, advanced electronics, and nuclear physics.

The University takes its unique character from Hampton Roads as it provides leadership to the state and nation in teaching, research, and service. Thus the University has a special mission for the Commonwealth in commerce, and in international affairs and cultures. It has a significant commitment in science, engineering and technology, particularly in fields of major importance to the region. As a metropolitan institution, the University places particular emphasis upon urban issues, including education and health care, and upon fine and performing arts.

As one of America’s major ports, Hampton Roads is the locus of national and international military commands, and the home of a culturally diverse population. The University therefore has natural strengths in activities having international outreach. Faculty members in such fields as business, economics, international studies, geography and the sciences strive to design curricula, teach courses, and encourage foreign exchanges that enhance the University’s role as Virginia’s international institution.

The Hampton Roads scientific environment provides special opportunities for science and engineering faculty to emphasize research and graduate programs in such fields as marine science, aerospace, and advanced electronics. Global ocean studies and cooperative research at NASA receive particular attention, as University researchers collaborate with U.S. and foreign engineers and scientists.

Urban issues are addressed by programs in public administration, education, the social sciences, and the health professions. The richness of Hampton Roads’ artistic life gives great vitality to the University’s programs in the visual arts, music, theatre, and dance.

MISSION

Old Dominion University promotes the advancement of knowledge and the pursuit of truth locally, nationally, and internationally. It develops in students a respect for the dignity and worth of the individual, a capacity for critical reasoning and a genuine desire for learning. It fosters the extension of the boundaries of knowledge through research and scholarship and is committed to the preservation and dissemination of a rich cultural heritage. Old Dominion University is old enough to value tradition yet young enough to facilitate change. In the spirit of creative experimentation, innovation, research, and technology, the University is ready to meet the challenges of the twenty-first century.

MISSION SUPPORT

Old Dominion University serves the needs of several internal and external constituents with its resources. These include: current and prospective students seeking undergraduate, graduate, and continuing education programs; business and industry; government agencies at all levels; the military; research organizations; and the community at large regionally statewide, nationally, and internationally. These constituencies are discussed in greater detail in the following paragraphs.

Old Dominion University offers a wide array of undergraduate programs, all of which meet national standards of excellence. Every Old Dominion undergraduate student follows a general education program that is designed to develop the intellectual skills of critical thinking and problem solving and to encompass the breadth of understanding needed for personal growth and achievement and for responsible citizenship. This general education program places special emphasis upon appreciation of the arts and upon understanding the perspectives of women, minorities, and non-Western cultures. Each undergraduate chooses a major program in the liberal arts or sciences or in a technological or professional field.

Old Dominion University’s graduate offerings are focused on society’s need for advanced professional education and on specialized programs at the master’s and doctoral levels for which the institution is prepared through unusual strength of faculty or special geographic advantages. All graduate programs meet national standards of excellence.

As a national leader in the field of technology-delivered distance learning, the University strives to enhance the quality of the educational experience, wherever education is delivered, by applying emerging technologies. It also supports research to explore the impact of these technologies on the teaching-learning process. By utilizing these technologies and by partnering with institutions of higher education, corporations, and governmental entities, the University is able to provide undergraduate and graduate degree programs to students across time and geographic boundaries.

Because of its commitment to Hampton Roads and its emphasis on creative innovation, Old Dominion University offers life-long learning opportunities through credit and noncredit courses and brings educational services and programs to the people of Hampton Roads at several off-campus centers. The University has a responsibility to serve the many members of the military services and their families. The military forms a unique combination of national and international constituents because they are from other locales in the United States and are looking to become, among other things, internationally capable in an international environment.

As a center of learning, Old Dominion University is committed to the principle of free inquiry. The University faculty of distinguished teacher-scholars seek to pass on the best in academic tradition while establishing themselves at the forefront of discovery and creativity. As partners in the development of the University’s future, the faculty enjoy full academic freedom and have a recognized role in the decision-making process of the University. Mindful of present and future needs for a multicultural academic climate, the University deems recruitment and retention of minority and women faculty members and staff to be essential.

The University is committed to providing the highest quality instruction to all students. Teaching excellence and student success are encouraged through faculty development programs and appropriate recognition of superior instruction.

The discovery of new knowledge through research and creative endeavor is a central function of Old Dominion University, which values and supports faculty participation in the discovery, synthesis, application and creation of new knowledge and art forms. The institution shall promote and preserve excellence in basic and applied research as a Carnegie Foundation Doctoral Research-Extensive University which is a key production and coordination force in technology development.

The University encourages the involvement of its faculty and staff in community service. The enrichment of the lives of students and residents of Hampton Roads is fostered through University sponsored cultural activities, fine and performing arts events, and intercollegiate athletics. In addition, through applied research and consulting, and other activities, the University plays a prominent role in the development of local business and industry and serves as a resource of government agencies and both public and private educational institutions.

The University seeks in its student body a diversity of age, gender, ethnic, religious, social, and national backgrounds. It actively recruits American minority students along with students from other countries worldwide in such numbers as to have their presence make a discernible impact upon the University’s educational processes. Old Dominion recognizes its mandate to serve both the academically gifted and those who have the potential for academic success despite educational, social, or economic disadvantages.

Extracurricular activities and experiences are offered that challenge students to develop a personal system of values, to think and act autonomously, to achieve physical competence, and to establish a sense of their own identity. Other services help students meet educational, personal, and health needs.

Old Dominion University depends on its alumni for advice, leadership, and support. In close collaboration with the University, the Alumni Association provides to former students opportunities to continue their participation in various aspects of university life, to advance their personal and professional development, and to sustain communication and strengthen bonds with their alma mater and fellow alumni.

To evaluate its accomplishments against its goals, a continuing process of systematic assessment is given high priority by the University. Information gained from such efforts is utilized to ensure the highest possible quality for all University programs. The Board of Visitors will conduct a periodic review of the University’s mission and major goals in conjunction with representatives of the major University constituencies. The review will ensure that the mission clearly identifies the University’s unique role in Virginia’s public higher education system and assures that the University is focusing its resources to be the best that it can be in that role to achieve its mission and accomplish the major goals.

Adopted by the Board of Visitors
June 10, 1971
Revised January 17, 1989
Revised April 15, 1999
Revised June 14, 2002

OLD DOMINION UNIVERSITY 3
Major Goals of the University

1. Students.
Old Dominion University is a selective admission institution. The University strives to serve those students in the immediate geographical area as well as attract students from the national and international communities. Additionally, the University seeks to attract and serve a culturally and ethnically diverse student body. The University pays particular attention to identifying and admitting students who are academically gifted. As a major metropolitan university, Old Dominion University has a special commitment to serve those students who have been academically, socially, or economically disadvantaged, but who have the potential for academic success.

2. Faculty.
Old Dominion University seeks to attract and retain a distinguished faculty of teacher-scholars. Its faculty enjoy academic freedom and have a recognized role in the decision-making process of the University. The University is committed to strengthening its faculty through the recruitment and retention of minorities and women.

3. Academic Programs.
UNDERGRADUATE PROGRAMS. As a comprehensive university, Old Dominion University offers and develops quality liberal arts, science, technology and professional programs. Old Dominion University undergraduate students follow a general education program that emphasizes intellectual skills and the breadth of intercultural understanding necessary for personal growth and achievement and responsible citizenship. All Old Dominion University degree programs meet national standards of excellence.

GRADUATE PROGRAMS. Old Dominion University’s graduate offerings are focused on society’s need for advanced professional education and on specialized programs at the master’s and doctoral levels for which the institution is prepared through unusual strength of faculty or special geographic advantages. In selected graduate programs, the University aspires to international leadership.

SPECIAL EMPHASIS AREAS. Because Hampton Roads is a major international maritime and commerce center that is Virginia’s window to the nation and world, the University has a special mission for the Commonwealth in commerce, and in international affairs and cultures. With the principal marine and aerospace activities of the Commonwealth concentrated in Hampton Roads, the University has a significant commitment to science, engineering and technology, specifically in marine science, aerospace and other fields of major importance to the region. Due to its location in a large metropolitan area, Old Dominion University places particular emphasis on urban issues, including education and health care, and on fine and performing arts.

4. Teaching.
Old Dominion University is committed to providing the highest quality instruction to all of its students. Teaching excellence is encouraged through faculty development programs and appropriate recognition of superior instruction.

5. Research, Scholarship and Creativity.
Old Dominion University is a center of learning committed to the principle of free inquiry. The University seeks to participate in the acquisition, discovery, synthesis, application, and creation of new knowledge and art forms through research, scholarly endeavor and creative undertakings by faculty and students. In selected areas of research, scholarship and creativity, the University strives for international recognition.

6. Distance Learning.
As a national leader in the field of technology-delivered distance learning, Old Dominion University is committed to providing academic programs to a diverse national and international population. The University seeks partnerships and alliances that will facilitate delivering those programs to place-bound students.

7. Life-long Learning.
Old Dominion University is committed to the concept of life-long learning, and offers credit and noncredit courses throughout the region. The University seeks to develop off-campus centers to bring educational services and programs to the citizens of the region. Because of the major Armed Forces presence in Hampton Roads, the University is particularly cognizant of its responsibility to serve members of the military services and their families.

8. Community Service.
Community service is an important part of the University’s mission. Particular importance is attached to the enrichment of the lives of students and residents of Hampton Roads through University cultural activities, fine and performing arts events, and recreational, intramural and intercollegiate athletics. The University acts as a resource to the business, industrial, health care and educational organizations, as well as to the agencies of local, state and federal government. The University is committed through applied research, consulting and other activities to playing a major role in advancing the overall development of Hampton Roads.

9. Student Life.
The University provides opportunities for student development outside of the classroom. Programs are offered to enhance personal and social growth of individual students, to provide an exciting and stimulating collegiate environment and to enable students to cope with educational, career, and health needs. Students choosing to live in on-campus housing benefit from programs especially designed to promote student educational and personal development.

10. Alumni.
Alumni are an important part of the University community. Through outreach programs, participation on advisory committees, and a variety of professional and social activities, the University maintains a close relationship with its alumni and seeks alumni involvement and support for planning and development purposes.

—Adopted by the Board of Visitors
January 17, 1989
Revised April 15, 1999

General Statement of Policy

Within the limits of the University’s facilities as to numbers that can be accommodated, admission to Old Dominion University is open to all qualified students without regard to race, color, religion, national origin, sex, age, veteran status, handicap, political affiliation, or sexual orientation; the facilities and services of the University are open to all enrolled students on those same bases, and all policies and standards of the University, including those governing employment, are applied accordingly. Students having concerns of this nature should contact the assistant to the president for affirmative action.

Accreditations

Old Dominion University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master’s, education specialist, and doctoral degrees.

Numerous programs of study at the University are accredited by specialized accrediting agencies which are recognized by the Council on Higher Education Accreditation (CHEA).

The baccalaureate degrees in civil engineering, computer engineering, electrical engineering, environmental engineering, and mechanical engineering are accredited as engineering programs by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The engineering technology programs in civil engineering technology, electrical engineering technology, and mechanical engineering technology are accredited as technology programs by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

The graduate and undergraduate teacher education degree programs in the Colleges of Arts and Letters, Education and Sciences are accredited by the National Council for Accreditation of Teacher Education.

The recreation and tourism studies curriculum is accredited by the National Recreation and Park Association/American Association for Leisure and Recreation Accreditation Council. Both the undergraduate and graduate program emphasis areas in sport management have received program approval through the North American Society for Sport Management (NASSM) and the National Association for Sport and Physical Education (NASPE).
The graduate program emphasis area in athletic training is accredited by the National Athletic Trainers Association (NATA). The graduate program in speech-language pathology is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. The master’s program in counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs. The doctoral program in clinical psychology is accredited by the American Psychological Association. The undergraduate program in chemistry is American Chemical Society certified.

The undergraduate and graduate business programs of the College of Business and Public Administration are accredited by the American Assembly of Collegiate Schools of Business (AACSB)-International. The graduate program in public administration is accredited by the National Association of Schools of Public Affairs and Administration.

The program in dental hygiene is accredited by the American Dental Association Commission on Dental Accreditation. The nursing program is accredited by the Commission on Collegiate Nursing Education and approved by the Virginia Board of Nursing. Graduate nursing programs are approved by the Pediatric Nursing Certification Board, the National Nurses Certification Corporation, American Nurses Certification Corporation, and the American College of Nurse Practitioners. The certified registered nurse anesthetist specialty is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs. The medical technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 8410 W. Bryn Mawr Avenue Suite 670, Chicago, IL 60631-3415, 773 714-8880. The physical therapy program is accredited by the American Physical Therapy Association, Commission on Accreditation in Physical Therapy Education (CAPTE). The environmental health program has been awarded accreditation from the National Environmental Health Science and Protection Accreditation Council. The nuclear medicine technology program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. The Master of Public Health has received accreditation from the Council on Education for Public Health. The cytotechnology certificate program and the ophthalmic technology certificate program are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

The Department of Music is a full member of the National Association of Schools of Music. The Department of Art is an associate member of the National Association of Schools of Art and Design. The theatre program is accredited by the National Association of Schools of Theater.

Affiliations

The University is a member of the Southern Association of Colleges and Schools, the American Council on Education, the National Commission on Accrediting, the Council of Graduate Schools in the United States, the American Association of State Colleges and Universities, the American Association for Higher Education, the Association of American Colleges and Universities, the Association of Governing Boards of Universities and Colleges, the Association of Urban Universities, the Council for the Advancement and Support of Education, the National Association of State Universities and Land Grant Colleges, the American Nuclear Society, the Southern Association for Co-op Education, the Southeastern University Research Association, the American Association of University Women, the University Extension Association, the National Society for Experimental Education, the Universities Space Research Association, the American Association of Collegiate Schools of Business, the National Council for Accreditation of Teacher Education, the Association of University Evening Colleges, the National Association of College and University Summer Sessions, the Association of Virginia Colleges, the Association of Schools of Allied Health Professions, the American Association of Dental Schools, the American Society for Engineering Education, the Consortium for Oceanographic Research and Education, and the Conference of Southern Graduate Schools. The University is also a Division I member of the Collegiate Athletic Association (NCAA) and the Colonial Athletic Association (CAA).

Old Dominion University is authorized by the Washington Higher Education Coordinating Board and meets the requirements and minimum educational standards established for degree-granting institutions under the Degree Authorization Act. This authorization is valid until June 30, 2006 and authorizes Old Dominion University to offer the following degree programs: Bachelor of Science in Business Administration (Accounting, Finance; Information Systems and Technology; Management; Marketing); Bachelor of Science in Communication; Bachelor of Science in Computer Science; Bachelor of Science in Criminal Justice; Bachelor of Science in Engineering Technology (Civil Engineering Technology; Electrical Engineering Technology; General Engineering Technology; Mechanical Engineering Technology); Bachelor of Science in Health Sciences; Bachelor of Science in Human Services; Bachelor of Science in Interdisciplinary Studies (Professional Writing; Teacher Preparation); Bachelor of Science in Nursing; Bachelor of Science in Occupational and Technical Studies; Master of Science in Community Health; Master of Science in Education (Pre-K through 6, Middle School Education, Secondary Education, and Special Education); Master of Engineering Management; Master of Science in Nursing (Nurse Educator; Nurse Leader); Master of Science in Occupational and Technical Studies. Any person desiring information about the requirements of the Act or the applicability of those requirements to the institution may contact the board office at P.O. Box 43430, Olympia, WA 98504-3430.

**Distinguished Faculty Chairs and Professorships**

In 1964, Virginia became the first state in the nation to establish an **Eminent Scholars Program**. Virginia encourages donors to create endowments to attract and retain outstanding faculty members by matching the income from these endowments, thus doubling the impact of the donors’ gifts. The generosity of several individuals and groups has made it possible for the University to establish chairs and professorships to support faculty members and their scholarly activities through this program. Included in these gifts are the following:

**The Commonwealth Professorships.** Provided by an anonymous donor as a substantial endowment gift in 1967, the endowment supports professorships in any of the University’s six colleges.

**The Samuel L. and Fay M. Slover Chairs.** A 1967 bequest from Mrs. Slover established an endowment which supports three chairs in oceanography. Col. Slover was the owner of The Virginia-Pilot and The Ledger Star.

**The Louis I. Jaffe Professorship.** In 1968, an anonymous donor created a professorship in the College of Arts and Letters in memory of the Pulitzer Prize-winning editor of The Virginian-Pilot, Mr. Jaffe.

**The Oscar F. Smith Chair.** The Oscar F. Smith Foundation made a grant in 1968 to establish an endowed chair in oceanography. The late Mr. Smith was president of Norfolk Shipbuilding and Drydock, Co., now Norshipco.

**Oceanography Professorships.** A challenge gift from the Norfolk Foundation in 1975 and gifts in response from corporations, friends, and alumni made possible an endowment to support several professorships in oceanography.

**The Constance F. and Colgate W. Darden Professorships.** The Dardens endowed two professorships, one in education and one in history, in 1976. The Darden College of Education was named in honor of Mr. Darden, a U.S. Congressman, former Virginia Governor and President of the University of Virginia.

**The George M. and Linda H. Kaufman Professorship.** The Kaufmans endowed this professorship in 1985. A lectureship in public affairs also bears their name. Mr. Kaufman is a former member of the Board of Visitors. Mr. Kaufmann led the effort to landscape the University’s mall which was named in honor of his parents.

**The A.D. and Annye Lewis Morgan Professorship.** The Morgan Trust in 1986 established this professorship consistent with the wishes of the Morgans. He was a successful Norfolk physician who also created a scholarship fund to benefit Old Dominion students. The professorship is for a faculty member in either the Frank Batten College of Engineering and Technology or the College of Sciences.

**The Mitsubishi Kasei Professorship in Manufacturing Engineering.** The Mitsubishi Kasei Corporation in 1990 established this professorship in manufacturing engineering in the Frank Batten College of Engineering and Technology.

**The William B. Spong, Jr., Professorship.** In 1988, The Landmark Charitable Foundation endowed a professorship on behalf of The Virginian-Pilot and The Ledger Star to honor the former U.S. Senator and President of Old Dominion University. The professorship is for a faculty member in the College of Business and Public Administration.

**The Frederick Wharton Beazley Professorship.** Created by an anonymous donor in 1989, the professorship in the College of Business and Public Administration was established to honor Portsmouth philanthropist, Mr. F.W. Beazley.

**The Mary Payne Hogan Endowed Professorship.** Established in honor of Mary Payne Hogan, the endowment was created in 1997 by an anonymous donor. The professorship supports the College of Sciences, specifically the Department of Biology.

**The Richard F. Barry, Jr. Chair.** Established in 1997, this endowment provides support for a chair in the College of Sciences Department of Mathematics and Statistics. Richard F. Barry III, a former member of the University’s Board of Visitors and Vice Chairman of Landmark Communications, Inc., created the endowment in honor of his father who taught mathematics at the University.
The Robert M. & Perry E. Morgan Endowed Professorship. Mr. Perry Morgan, former Editor-in-Chief of The Virginian Pilot, established a professorship in the College of Arts & Letters in 1997 in honor of his wife, Ruth. The professorship supports a doctoral American literature position with an emphasis in Southern literature.

The Mina Hohenberg Darden Chair in Creative Writing. This endowed English department professorship was initiated in 1997 as a memorial to Mina Hohenberg Darden by her family and friends. Mrs. Darden received three M.A. degrees from Old Dominion and was working toward an M.F.A. in poetry.

The Ray Ferrari Endowed Professorship. A former student, E. James Hayes, instituted an engineering department professorship in 1997 to honor his mechanical engineering technology professor and mentor, Ray Ferrari.

The Perry Endowed Chair. Patricia W. and J. Douglas Perry initiated an endowed chair in 1997 to support a chair in the psychology department within the College of Sciences. Mrs. Perry is a former member of the Board of Visitors and Mr. Perry served on the board of Old Dominion University's Educational Foundation.

The William E. Lobeck, Jr. Endowed Chair. Established in 2002 by the Lobeck-Taylor Foundation, this funding created an endowed chair in advanced engineering environments in the Frank Batten College of Engineering and Technology. Mr. Lobeck is an alumnus and former president of the Auto Nation Rental Group of Republic Industries.

The Diehn Chair in Computer Science. In 1998, former faculty member Dr. Richard Cheng endowed a chair in the department in which he helped establish accreditation. He is the Chairman and CEO of ECI Systems and Engineering.

The Diehn Chair in Music. The Diehn Fund, established by the estate of F. Ludwig Diehn, provided the funding in 1999 for a chair in music. The Diehn Fund also supports the Diehn Concert Series and the Diehn Fine and Performing Arts Center.

The Dragas Professorship in International Studies Endowment. This endowed chair was established in 1996 by the George and Grace Dragas Foundation to create a professorship in international studies. Mr. Dragas is an alumnus and former Rector of the University's Board of Visitors.

The Robert M. Stanton Chair in Real Estate and Economic Development. Mr. Robert M. Stanton, a 1961 alumnus of Old Dominion University, established a chair in real estate and economic development in the College of Business and Public Administration in 2003. The purpose of the chair is to help develop and enhance the Center for Real Estate and Economic Development into a nationally recognized institution.

The P. Stephen Barna Professorship Endowment. Mr. E. James Hayes, a 1969 alumnus of Old Dominion University, established a professorship for aerospace engineering in the Frank Batten College of Engineering and Technology in 2003.

The Robert Stiffler Distinguished Professorship in Botany. The Robert Stiffler Distinguished Professorship in Botany was created in 2003 by an anonymous donor. The professorship in the College of Sciences honors 28 years of Robert Stiffler's service to The Virginia-Pilot and the community as a gardening columnist and expert. The chair will help Old Dominion University and the Norfolk Botanical Garden fulfill their research goals in the field of botany.

The Jack Cunningham Distinguished Professorship in Reading. The Jack Cunningham Distinguished Professorship in Reading was established in 2003 by an anonymous donor.

The Batten Chairs. The Batten Chairs were established in 2003 by Frank and Jane Batten. Mr. Batten is the Chairman of the Executive Committee for Landmark Communications and was the first rector of the Board of Visitors. The Batten’s $32 million gift, the largest in Old Dominion’s history, will benefit all six of the University’s colleges with emphasis to the Frank Batten College of Engineering and Technology and the College of Sciences. His son, Frank Batten, Jr., has also served as rector of Old Dominion University and is a member of the Board of Visitors.

The Professor of Computer Science Networking. The Professor of Computer Science Networking endowment was established in 1992 within the College of Sciences by the Department of Computer Science.

The Jesse and Loleta White Lectureship. Created in 1992 by the Aphasia Foundation of Virginia, this endowed chair supports a faculty position in the Child Study Center within the Darden College of Education.

Educational Foundation

The Old Dominion University Educational Foundation is a nonprofit 501(c)(3) corporation chartered in 1955 to receive and manage gifts that support the educational mission of the University. As of January 1, 2004, the Foundation was responsible for managing approximately $130 million of assets, including $11 million of University endowments. The foundation is supported by the University’s Office of Development and is governed by a Board of Trustees consisting of alumni and friends of the University.

Intercollegiate Foundation

The Old Dominion University Intercollegiate Foundation was incorporated in 1964 to provide funds for the University to compete successfully in intercollegiate athletic programs. The foundation is governed by a Board of Trustees comprising alumni and friends of the University. Its activities are coordinated through the Department of Athletics and the Office of Development. As of January 1, 2004, the foundation’s assets were approximately $8.2 million.

Research Foundation

The Old Dominion University Research Foundation is a separate, private, not-for-profit corporation chartered under the laws of the Commonwealth of Virginia in 1965. The foundation serves as the fiscal and administrative agent to manage research and aid in technology commercialization for Old Dominion University. The foundation’s purpose is to promote the education, research and public service objectives of Old Dominion University by encouraging, advancing, fostering, and conducting research in engineering, the physical and life sciences, the humanities, education, and all other branches of learning.

The foundation is the contracting agent for University research grants and contracts with external funding agencies. In fiscal year 2003, the Research Foundation received $32.2 million in awards for research and sponsored programs. Research and sponsored program activity for fiscal year 2003, measured by amount of expenditures, totaled $33.6 million for projects sponsored by federal, state, and local government agencies and a variety of corporations and private foundations.

Technical direction of a sponsored project remains the responsibility of the principal investigator. The foundation supports the University and assists investigators by providing a broad range of administrative and technical services. Among these services are: financial administration, budget preparation and monitoring, financial compliance guidance, proposal preparation and submission assistance, technical and financial reporting support services, intellectual property administration, procurement and equipment inventory control.

University Libraries

The University Libraries consist of Perry Library, the Hofheimer Art Library, and the Diehn Composers Room. Together the collections of 2.8 million items in all fields of instruction include monographs, journals, government publications, maps, electronic resources, musical scores and recordings, and other media. Perry Library is also a repository for United States and Commonwealth of Virginia government publications. Special Collections houses manuscript collections, including the Tidewater Collections and the University Archives. Library services and resources are available from the University Libraries Web site located at http://www.lib.odu.edu. The Library belongs to several consortia which supplement the collection with more specialized materials. Through the Virginia Tidewater Consortium, students and faculty have reciprocal borrowing privileges from local academic libraries. Electronic indexes and abstracts, reference sources, and full text journals are available to users from the Virtual Library of Virginia (VIVA).

The University Libraries offer many services. These are listed below:

Art Library: Diehn Fine and Performing Arts Center, Room 108, 683-4050. The Elise Hofheimer Art Library collection contains materials related to the visual arts and arts-related journals. Holdings include a video collection with video monitors for viewing. The Art Library also provides an area to view photographic slides. Public workstations with Internet access provide links to the library’s Web site and online catalog. Reserve materials for Art Department classes are available at the service desk. Visit the Art Library Web site at http://www.lib.odu.edu/artlib.

Circulation and Reserve Services: 1st Floor, 683-4154. To borrow books and other materials in person, students present a valid University ID. Users can check their patron records, renew materials, and access reserves online. Information on borrowing privileges, loan periods, and policies are available at http://www.lib.odu.edu/services/circulation.

Group study rooms are available by reservation. Reserve materials are available in print or electronic format. Electronic reserves are accessible at http://www.lib.odu.edu/ereserves.
Computer Lab: Room 164, 683-6097. The computer lab provides access to the Internet, word processing and spreadsheet applications, as well as to library resources. Computer Center personnel staff the lab.

The Diehn Composers Room: Diehn Fine and Performing Arts Center, Room 189; 683-4173. The F. Ludwig Diehn Composers Room is comprised of three areas: the Listening Library, the Reading Room, and the Seminar Room. The Listening Library houses music special collections, scores, music videos, and sound recording collections as well as a full complement of audio equipment available for users. Additionally, a multimedia computer, VCR, and laser disc player station is available. Reserve materials for Music Department classes are available at the service desk. The Reading Room offers space for the study of manuscripts and other special collections materials. Data connections and electrical outlets are available for laptop computer use. A Steinway grand piano affords scholars and researchers the opportunity to play selections from the special collections as desired. A seminar room is available for course level instruction and is also equipped with data connections and whiteboards for instructional activities.

Information on services and collections is located at http://www.lib.odu.edu/musiclib.

Digital Services Center: Room 341, 683-5953, 4184. The Digital Services Center provides assistance with the preparation and delivery of course and research materials for the Internet or other media. High-end computers are available with a variety of peripherals and software programs to allow scanning of images, texts or slides; creation or digitization of audio and video; manipulation and analysis through Geographic Information Systems: videoconferencing, CD-ROM mastering; and Web page development. Center staff work with faculty members offering classes on web publishing and other multimedia use. Detailed information about services and digital collections is on the Center's Web site at http://www.lib.odu.edu/dsc.

Interlibrary Loan Services: Room 109, 683-4170, 4171. Interlibrary Loan Services facilitates research by obtaining materials not available in the University Libraries’ collection from other libraries. As a member of the OCLC (Online Computer Library Center) bibliographic network, the University Libraries have access to the holdings of other libraries worldwide. A statewide interlibrary loan agreement among the Virtual Library of Virginia (VIVA) participants ensures students and faculty may obtain items located in another Virginia library. Interlibrary loan requests can be expedited through the use of the online request form available on the library’s Web site. Books and journal articles not available in the Perry Library collections can be requested from Interlibrary Loan Services through the electronic request form available from the library Web site, http://www.lib.odu.edu/services.

Library Services for students with special needs: The University Libraries offer a variety of services for students with special needs, including a computer equipped with a scanner, voice synthesizer, and specialized programs that read scanned text aloud or enlarge the text on any screen. Circulation Services offers an “on-demand service” for patrons who may need special assistance retrieving library materials. Students can inquire about library services at the University’s Disabilities Center or at the library’s Circulation and Reference Services departments. Additional information about these services is available at http://www.lib.odu.edu/disabilities.

Microform Services: Room 219, 683-5912. Microform Services is an open stacks area where users have easy access to the collections. Staff members are available to assist with locating materials, use of the equipment, referrals to other library services, and collections content. Assistance with the online catalog, periodical catalogs, and locations of materials by format is also provided. Printing is available and is fee based. Additionally, the Serials Service Desk is located on the second floor to provide users with assistance to the journal collection, general collection, and materials not held by the library.

Photocopy Services Center: Room 220, 683-4172. Full service copying is available in the Photocopy Services Center located on the second floor. Self-service copiers are also available on the first and second floors. Assistance is available at Circulation Services or Microforms Services. Copy cards may be purchased at the Photocopy Services Center and in Reference Services located on the first floor. Network printing is available from the public workstations located in Reference Services. A bill changer machine is located on the first floor.

Reference and Research Services: 1st Floor, 683-4178. Reference and Research Services provides students and faculty members with services and materials, which support classroom instruction, campus research programs, and student research for assignments, projects, papers and presentations. The department houses a print collection of significant reference materials such as dictionaries, encyclopedias, statistical directories, and guides to the disciplines taught on campus, as well as to online indexes and abstracts to the scholarly research literature for these disciplines. In addition, the department houses extensive collections of government documents, both print and electronic, on many subjects. Students and faculty may obtain a wide range of journal articles in the humanities, the sciences, technology, and the social sciences and can access these resources at the library’s many computer workstations, or in the campus computer labs, and from home through their own desktop computers. Library reference staff members offer assistance with the location of materials, identification of sources to consult, and in research methods and strategies. The Library’s Web site offers links to collections, online databases, self-paced tutorials, and scholarly resources. Distance learning students may obtain assistance by calling the department or using the Ask A Librarian service, located at http://www.lib.odu.edu, for a consultation with a reference librarian or assistance in locating materials.

User Instruction: Reference and Research Services offers classroom instruction, workshops, and tours to assist graduate and undergraduate students with library research throughout the academic year. Additional information on instruction services can be found at the Library’s Web site, http://www.lib.odu.edu/research.

The library catalog, electronic resources, and services are available from the library’s Web site http://www.lib.odu.edu.

Virginia Beach Higher Education Center, Information Resource Center: Room 146, 368-4100. The Virginia Beach Higher Education Center’s Information Resource Center includes TELETECHNET program services, audio visual equipment, and the computer lab at a single, convenient point for students. Librarians work via phone, email and on site instruction sessions to assist students in learning resources needed for specific classes. Center staff assist with reserve materials and delivery of books and other materials. Lab stations provide online access to traditional library resources and services via the University Libraries home page. Library web services include email consultation and reference services, interlibrary loan services, access to the library collections through its online catalog, to scholarly databases, to electronic reserves, and to academic-level web resources for university programs. The library’s web page is accessible from both the lab and home at www.lib.odu.edu.

The Office of Computing and Communications Services

As technology continues to change the way faculty teach and students learn, the Office of Computing and Communications Services (OCCS) maintains a leadership role in Old Dominion University’s dedication to providing technology-intensive disciplines and innovative educational delivery processes. With responsibility for research, consultation, support, and maintenance for computing and communications technology for the University, OCCS is committed to delivering high-quality computer, information processing, and telecommunications services. In addition to maintaining the University’s central computer system, OCCS provides/manages all computing accounts for faculty, staff, and students. The department also maintains Academic Computer Labs, instructional labs, University-wide data and telephone networks, and the University telephone system, and provides audio/visual equipment in support of academic and University-related activities. Technology support services for faculty, staff and students include a Customer Service Center that is open over 75 hours per week, with 24-hour telephone and e-mail problem reporting, and a Student Technology Assistant Team that provides on-site and walk-up technical support for students.

Detailed information about these services is provided in the following paragraphs. Additional information about all computer services at Old Dominion University can be found on the OCCS web site at www.odu.edu/occs.

Computer Accounts

In support of the University’s mission of teaching, research, and other educational pursuits, OCCS provides three types of accounts for all students – MIDAS account, University student e-mail account, and University student LAN account. All accounts are established electronically via the University web site.

MIDAS (Monarch Identification and Authorization System), released in January 2004, is gradually moving the University to “same sign on” for all technology access. The account is created from the MIDAS web site at http://midas.odu.edu, with individual account holders selecting both their own user name and password. Additionally, the establishment of a security profile allows the account holder to create a new password without knowing the current password. A MIDAS account is required to log in to the University Portal, a web site that can be customized by the individual with links to the web resources accessed most frequently (see section below on University Portal).
University Student E-Mail Account provides a vital communication link between students and University administrators, departments and faculty members. Activated online at http://season.odu.edu, the account provides a universal ID and password that is used to access Blackboard, on-line courses, faculty web pages and lecture notes, video streaming courses, Faculty/Student Communication System (FSCS) and many other important resources. Activation is immediate for mail purposes, but may require 24-48 hours for access to resources on other servers. (Blackboard is a web-based course management system that incorporates web pages, e-mail, discussion boards, chat rooms, online quizzes, virtual groups, and document sharing; FSCS is a web-based utility that allows course instructors and students enrolled in the course to add documents directly to a shared database.)

Student LAN Account is required for students to log in to computers in all University public computer labs. OCCS-supported departmental labs, and some department-supported labs on the main campus and at the Virginia Beach, Peninsula, and Northern Virginia Higher Education Centers. Activated online at http://season.odu.edu, the Student LAN Account is also required for students to access the Internet from University-supplied connections in the individual dorm rooms and common areas in the residence halls, and from wired jacks in several main campus buildings. Additionally, a University LAN account is required to access the University’s wireless network (see section on Wireless LAN).

Computer Labs

OCCS maintains University public computer labs equipped with Windows 2000-based systems and various computer applications in support of class requirements. Laser printing is available in all labs. Students must have a University LAN account (see section on Accounts) to use the computers in the labs. Labs are located in: BAL, University Library, Webb Center, Virginia Beach Higher Education Center, Peninsula Higher Education Center, and Northern Virginia Higher Education Center. Lab schedules are posted on the OCCS web site at www.odu.edu/occs. Consultants are available in all labs to provide assistance with application and computer-related questions and problems.

Customer Service Center

The Customer Service Center (CSC), located in Webb Center, is the central point of contact to the Office of Computing and Communications Services. The CSC may be reached by telephone at (757) 683-3192 or by e-mail to occhelp@odu.edu. OCCS personnel coordinate responses to computing problems and questions and, when necessary, forward inquiries to the appropriate support group.

Internet Access

In partnership with Network.Virginia, high-speed Internet connectivity is provided to all workstations on the University network, including computer labs, offices, and wired dorm rooms. In the dormitories, sufficient Internet connections are provided to allow each resident an individual connection. Student assistants provide support with set up and connectivity issues.

MONARCHtchechstore

Located in the University’s Webb Center, the MONARCHtchechstore offers a lowest-price guarantee on computers, peripherals, hardware, software, and supplies. Updated information is available at www.odu.edu/tchechstore.

MONARCHVision

MONARCHVision is the University’s Campus Video/TV Network with service provided in all Residence Halls.

Software Download

Through the University’s software licensing program, some software is made available for students to download to their personal computers. This software includes Xwin 32 and the most current versions and upgrades of the McAfee VirusScan software. Downloadable software is available on the OCCS web site at www.odu.edu/occs – Enter as Student, click on Software, and then click on University License Software available for download for all Students, Faculty, and Staff. When prompted for authentication, enter the University student e-mail account username and password.

University Portal

The Old Dominion University Portal, located at https://my.odu.edu, provides University faculty, staff, and students a single point of access to their University services. Individuals may customize their portal page with links to the resources they access most frequently, including Blackboard, Leo Online, University-wide announcements, and Internet-based University email, address book and calendar.

URL Locator

Many faculty members maintain course web pages from which students may access course information, lecture notes, assignments, etc. The University web page provides a tool called the URL Locator, an on-line list of faculty web page addresses. From the University home page at www.odu.edu, click on Current Students, and then select the Course Web Pages link from the Academic Resources menu.

Many faculty members secure their web pages to limit access only to students registered in their class. The required authentication information is the University student e-mail user name and password; therefore it is extremely important that students activate their University student e-mail account.

Wireless Local Area Network (WLAN)

Available almost universally across the Norfolk campus, the WLAN makes it possible for faculty, staff, and students to access the Internet from their laptop computers while enjoying a Starbucks coffee in Webb Center, conducting research in the University Library, or enjoying the sunshine in Tonelson Garden. A University LAN account (see section on Accounts) is required to access the wireless network.

Office of International Programs

John D. Heyl, Executive Director

The Office of International Programs (OIP) coordinates activities that focus on Old Dominion University’s strategic commitment to campus-wide internationalization. These activities fall into three general categories, all of which are designed to expand student understanding of our interdependent world: encouraging the incorporation of international issues and perspectives into undergraduate and graduate education; facilitating international exchange of students and faculty; and sharing international interests and expertise with the broader Hampton Roads community that Old Dominion University seeks to serve. For more detailed information, visit the OIP website at www.odu.edu/oip.

OIP facilitates the development of the University’s cooperative agreements and exchange programs with other institutions of higher learning around the world in order to encourage exchange of students and faculty as well as collaborative research. OIP staff provide advising support for international fellowships, such as the Fulbright, National Security Education Program and Freeman Foundation scholarships.

OIP sponsors and coordinates international programs that serve and involve the citizens of the region and the state. These may include appearances by foreign diplomats, scholars and artists, workshops for teachers and other professionals, and support for internationally-focused community organizations. OIP includes the University’s English Language Center (in the Batten Arts and Letters Building), Office of Study Abroad, Office of International Admissions and Office of International Student and Scholar Services (in the Dragas International Center).

Office of Study Abroad (OSA). Increasing global awareness happens in both the classroom and elsewhere on Old Dominion’s multicultural campus, but there is no substitute for acquiring a personal perspective on our increasingly interdependent world. Old Dominion students participate in a wide array of study abroad experiences as an integral part of their college education. Short-term programs of study in the summer and over the spring and winter breaks are available in a dozen subject areas (from Conflict Resolution in Northern Ireland to Geography Field Study in Costa Rica to French Studies in Tours to Business Studies in Korea and China). Semester and academic year study abroad programs and reciprocal student exchange programs offer long-term opportunities in virtually all areas of the world. Old Dominion has exchange partner relationships with over 100 universities overseas, and is a member of study abroad consortia that sponsor high quality programs around the globe. Regardless of one’s field of study, all Old Dominion students can study abroad. Practically all forms of student financial aid may be applied to an academic program.
abroad, travel grants are available for many programs, Dean's Education Abroad Awards provide special support for selected majors, and internships, volunteer and short-term work opportunities overseas are additional options. Old Dominion's Presidential Global Scholarships provide unique four-year global opportunities, including study/internship abroad.

The Old Dominion University's TELETECHNET program delivers graduate and upper-division undergraduate courses to students at community college site locations across the Commonwealth of Virginia. Students are able to complete their entire degree program at local community college campuses. The participating community college provides course work required for the first two years of study and Old Dominion University, through an integrated system of video, audio signals and computer, provides the final two years of course work leading to a baccalaureate degree. Graduate programs are also available to these locations.

Old Dominion's statewide network of site locations extends well beyond the community colleges with course offerings at four Higher Education Centers, various military bases and corporations. Out-of-state site locations are operating in Arizona, Georgia, Illinois, and Washington state. At these sites students may register for classes, meet with advisors, and attend classes both on-site and using telecommunications technologies.

In addition, the University offers a variety of courses and degree programs using Internet technologies, such as video streaming, that provide students the opportunity to take courses from any location.

Military Bases

The University offers several graduate and undergraduate programs on military installations to assist military personnel and their families in accomplishing their career development and career transition goals. Within Virginia, courses, programs and/or services are offered at Naval Air Station Oceana, Norfolk Naval Station, Fleet Combat Training Command Dam Neck, Langley Air Force Base, Naval Amphibious Base Little Creek, Naval Medical Center Portsmouth, Fort Eustis, Fort Monroe, Fort Belvoir, Marine Corps Base Quantico, Fort Lee, Fort Myer, the Pentagon, Dahlgren Naval Surface Warfare Center, and Aegis Command at Wallops Island.

Outside Virginia, educational services/programs are provided at Walter Reed Army Medical Center (DC), Naval Submarine Base, Bangor and Naval Station Everett in Washington state, and the Atlantic Undersea Test and Evaluation Center on Andros Island in the Bahamas. In addition, through the Navy College Program for Afloat College Education, Old Dominion provides graduate business courses to U.S. Navy ships deployed around the world, a master's degree in engineering management, and undergraduate courses in engineering technology via asynchronous technologies. The University is a participant in the Navy College Program Distance Learning Partnership and a member of the Service Members Opportunity Colleges.

Higher Education Centers

Old Dominion University operates four higher education facilities in Hampton, Portsmouth, Virginia Beach (in partnership with Norfolk State) and Northern Virginia.

These full-service higher education centers offer a wide range of academic programming, including programs and courses at the graduate level and at the upper-division undergraduate level. Courses are conducted on-site and through telecommunications networks. Each facility also offers non-credit courses and provides meeting and training facilities for government agencies, corporations and industry, and nonprofit organizations. Capabilities include seminar/meeting rooms, teleconferencing, and administrative support. Students are provided on-site registration, advising, textbook acquisition, computer labs, and access to the University's library and mainframe computer.

Entrepreneurial Center

The Entrepreneurial Center specializes in providing business assistance to technology-driven start-up and existing growth companies. Examples include software and innovative products/service companies. The center also assists with raising funds for small "growth" businesses. For more information, please phone or fax 757-549-4916.

Distance Learning and Extended Education

Old Dominion University's TELETECHNET program delivers graduate and upper-division undergraduate courses to students at community college site locations across the Commonwealth of Virginia. Students are able to


Office of International Admissions (OIA). All students seeking or holding non-immigrant visas apply to the Office of International Admissions for admission to Old Dominion University. International admissions staff evaluate international educational credentials, make undergraduate admission decisions and forward evaluations of graduate applicants' academic work to graduate program directors who make admission decisions for graduate programs. Once admissibility has been determined, formal notification of the undergraduate or graduate admission decision is sent by the Office of International Admissions. OIA administers four-year financial awards at admission to a highly selective group of undergraduates.

Procedures for applying as an international student are detailed in the Undergraduate and Graduate International Application which is available from Old Dominion University online.

The Office of International Admissions also monitors English language proficiency requirements for all non-native speakers of English holding non-immigrant visas. For more information, visit the OIA website at www.odu.edu/intladm.

English Language Center. The English Language Center (ELC) offers a program in English as a Second Language for international students and members of the local international community. The ELC offers intensive (six seven-week sessions per year) and semi-intensive ("Bridge") courses in grammar, composition, reading/vocabulary, and speaking/listening ranging from beginning to advanced levels. Through these courses, the ELC helps prepare students for study at American colleges and universities or for using English in workplaces around the world. It administers the institutional TOEFL six times a year. Admission to ELC programs in no way implies admission to other academic programs at Old Dominion University. Visit the ELC website at www.odu.edu/esl.

International Student and Scholar Services (ISSS). The Old Dominion University community includes more than 1,150 international students and 100 visiting scholars. More than 100 foreign countries are represented in the University community. Serving the needs of international students and scholars, a complete range of immigration and related legal advising, community outreach, and individual assistance with the many cultural aspects of studying in a foreign country, ISSS administers the International Student Leadership Award Program, which provides tuition support for international students who demonstrate extraordinary leadership and academic involvement. Visit the ISSS website at www.odu.edu/iss.

Northern Virginia Higher Education Center
21335 Signal Hill Plaza, Suite 300
Sterling, VA 20164
703-948-2750
703-948-2762 (fax)
nvc@odu.edu
http://www.odu.edu/nvc

Peninsula Higher Education Center
600 Butler Farm Road, Suite 200
Hampton, Virginia 23666
757-766-5200
757-766-5201 (fax)
phc@odu.edu
http://www.odu.edu/dl/peninsula/

Tri-Cities Higher Education Center
7000 College Drive
Portsmouth, VA 23703
757-686-6220
757-686-6219 (fax)
tntcc@odu.edu
http://www.odu.edu/ao/tricities

OLD DOMINION UNIVERSITY
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Weekend College

Weekend College is part of the academic program at Old Dominion University. Offerings during the weekend include undergraduate, graduate, and certificate programs as well as courses for general education requirements, teacher recertification courses and classes for personal and professional development.

Students attending Weekend College at Old Dominion University must meet the University’s admission requirements and appropriate program requirements, if specified for an undergraduate or graduate program. Undergraduate degree-seeking students may also be required to take the English and Math placement examinations.

Weekend College offers courses during fall, spring and summer sessions. Students may obtain information online at http://www.odu.edu/weekend-college.

For more information, call 683-6388 or e-mail weekend@odu.edu.

Orientation

Upon admission to the University, undergraduate students and their parents and guests are invited to attend the University’s orientation program, PREVIEW. Students entering the University as new freshmen (including transfer students with less than 24 hours) are required to participate in the PREVIEW Orientation program. PREVIEW is scheduled throughout the summer in a series of one-day sessions for transfer students and two-day sessions for incoming freshmen. Housing in campus dormitories is provided for the latter. Additionally, a one-day Transfer Preview is scheduled in the spring for transfer students who are admitted early for the fall semester. Fees for PREVIEW are determined each year. For more information, see the web site at www.odu.edu/PREVIEW.

At PREVIEW, students take required placement tests, meet with academic advisors to plan and register for fall semester classes, receive an orientation to campus facilities and services, and become acquainted with the University staff, upperclass students, and other new students through informational and social activities. A program for parents and guests is scheduled concurrently.

A PREVIEW is also scheduled in December and January for students enrolling in the spring semester. A program for parents and guests is scheduled concurrently.

Office of Multicultural Student Services

The Office of Multicultural Student Services was established in 1980 as an integral part of the Division of Student Services at Old Dominion University. The office is committed to enhancing the opportunities for educational growth, retention, and successful matriculation of students of diverse backgrounds including American Indian/Native Alaskan, African American, Asian American, Hispanic/Latino, and Gay, Lesbian, Bisexual and Transgender. The office also has the responsibility of heightening the sensitivity of the University community to the needs, interests, and culture of these students.

Multicultural Student Services strives to fulfill its commitment to students of diverse backgrounds by undertaking the following responsibilities:

- Supporting multicultural recruitment and orientation programs;
- Sponsoring and supporting programs and activities which enhance the educational and cultural experience of multicultural students;
- Coordinating peer and faculty mentor programs and tutorial services to increase student retention;
- Developing and maintaining communication between the University administration and its multicultural population; and
- Cooperating with the University community to establish policies and procedures which reflect and reinforce the institution’s multicultural diversity.

For more information about the services that the Office of Multicultural Student Services provides, visit the website at: http://www.odu.edu/msl.

Cocurricular and Extracurricular Activities

Office of Student Activities and Leadership. Involvement in student activities has a great potential for contributing to students’ overall development. By discovering and participating in cocurricular and extracurricular activities, students can develop their interpersonal and leadership skills and increase their career-related learning. The goal of the Office of Student Activities and Leadership is to personalize and broaden the educational experience of the University’s students. Toward this goal, the office works with students, faculty, and staff to create an atmosphere conducive to social, multicultural, and recreational nonacademic and cocurricular activities. The office’s involvement includes the following:

1. Sponsoring social, multicultural, and educational programs through the Student Activities Council (SAC). These programs include films, cultural events, dances, lectures, concerts, and trips.
2. Coordinating space allocations in Webb Center for meetings and events.
3. Supervising students in the organization of major concerts and other fund-raising activities.
4. Supervising fraternity and sorority activities and events.
5. Directing the organization and implementation of special events such as Main Street (the campus organizational fair), the Housing Fair, Who’s Who Among Colleges and Universities, the Student Services Leaders Award Ceremony, and Leadership Labs.
6. Coordinating the recognition and annual registration process for current student organizations and for new student groups, and coordination of student organizational budgets.
7. Providing continuing support for student organizations, including officer training, group development, and leadership education.
8. Coordinating commuter student activities and services.
9. Encouraging ethnic, cultural, gender and other special interest groups to sponsor their own events in order to promote multiculturalism on campus.
10. Providing an outlet for volunteer services, allowing students, faculty, and staff volunteers to link up with volunteer and community services throughout Hampton Roads.

Leadership Development Opportunities. To maximize and realize the potential of individual students and student organizations, the Student Activities and Leadership Office assists in the planning and implementation of students’ participation in leadership conferences, seminars, courses, and retreats throughout the academic year. These programs, available to any special interest group or student organization, focus on the identified purpose or needs of each group. Individual students interested in developing their leadership skills are urged to participate and make their needs known. A student leadership course in Educational Leadership and Services and the opportunity for credit for extracurricular activities are also available.

Student Organizations. The University recognizes a wide variety of clubs that promote student interests in a broad range of fields. The following is a comprehensive list of student-run organizations summarized by category.
DEPARTMENTAL INTEREST
Association of Information Technology Professionals
Association for Psychology Students
Biology Graduate Student Organization
English Graduate Student Organization
Exercise Science Club
Finance Club
German Scholars
HONOR SOCIETIES
Alpha Eta Society
Beta Alpha Psi
Beta Beta Beta
Business Honors Student Society
Epsilon Mu Eta
Golden Key International Honor Society
Omicron Delta Kappa
Order of Omega

PROFESSIONAL
Alpha Kappa Psi
American Chemical Society
American Society of Civil Engineers
American Society of Mechanical Engineers
Associated General Contractors
Aviation Club
Council for Exceptional Children
Delta Epsilon Chi
Graduate Athletic Training Organization
Graduate Sport Management Club
Institute of Electrical and Electronics Engineers
Managerial Auditing and Accounting Club
Master of Business Administration Association
Minds About Progress
Music Educators National Conference
National Art Education Association

RELIGIOUS
Bahai Club
Baptist Student Union
Campus Impact
Catholic Campus Ministry
Chi Alpha Christian Fellowship
Edj Fellowship of Christian Athletes
Hillel
International Student Christian Fellowship

SERVICE
Alpha Phi Omega
Circle K Order

SPECIAL GOVERNING BOARD
Interfraternity Council
National Pan-Hellenic Council

SPECIAL INTEREST
African Caribbean Association

Health & Physical Education Majors Club
Human Services Association
Ocean, Earth, and Atmospheric Sciences Graduate Student Organization
Recreation & Tourism Studies Majors Club
Society of Physics Students Student Ambassadors
Phi Alpha Theta Phi Eta Sigma Phi Kappa Phi Phi Sigma Tau Pi Kappa Delta Pi Sigma Alpha Pre-Medical Honor Society PSI Chi Scabbard and Blade Sigma Tau Delta Tau Beta Pi

National Science Teachers Association
National Society of Black Engineers
National Student Speech Language and Hearing Association
Physical Therapy Club
Semper Fidelis Society
Society of Automotive Engineers
Society of Women Engineers
Sport Management Club
Student American Dental Hygiene Association
Student Nurse Corps Association
Student Nurses Association
Student Virginia Education Association
Technology Education Collegiate Association
Theta Tau

Intervarsity Christian Fellowship
The Hampton Roads Church Student Fellowship
Joel 2:28 Latter-Day Saint Student Association
Mu Omicron Gamma
Muslim Students’ Association
Word of the Spirit
Wesley-Westminster Student Association
Rotoract Club
Science and Education Club
Panhellenic Council
Student Senate

Anime Club
Artificial Intelligence Initiative
Asian Pacific American Student Union
Black Student Alliance
Blacks and Gold Society
Blue and Gold Society
Chinese Student and Scholar Association
College of Science Graduate Student Association
Commuter Student Group
Dance Association
Delta Sigma Lambda
Ebony Impact Gospel Choir
Education For Compassion
Feminist Majority Leadership Alliance
Filipino American Student Association
Hip Hop Summit Action Network
Honor Council
Indian Students Association
In Support of Children
Latino Student Alliance
Laureate
Mace and Crown
MaceAndCrown.com
Mediterrania Arabia
Model United Nations Society
Monarch Dance Team

Fraternities and Sororities. There are 11 international fraternities and nine international sororities at Old Dominion University. The purpose of these organizations includes the maintenance of high standards of fraternal life and inter-Greek relations and cooperation with the University in achieving high social standards and sound scholarship. Service to the University and the community, encouragement for leadership and brother/sisterhood are also at the forefront of Greek activity. New member recruitment starts at the beginning of each semester and is a time of interaction with members of these groups. Greek membership is a lifetime commitment to ideals, goals and values as each chapter interprets them. The groups are coordinated through the National Pan-Hellenic Council (NPHC) and Panhellenic Council (PHC) as well as through the Office of Student Activities and Leadership. Top Greek leaders and scholars are eligible for membership in the Order of Omega National Greek Honor Society.

Fraternities at the University include:
- Alpha Phi Alpha
- Kappa Delta Rho
- Lambda Chi Alpha
- Omega Psi Phi
- Phi Beta Sigma
- Pi Kappa Alpha
- Sigma Nu
- Sigma Phi Epsilon
- Sigma Pi
- Tau Kappa Epsilon
- Theta Chi

Sororities at the University include:
- Alpha Phi
- Alpha Xi Delta
- Delta Sigma Theta
- Delta Zeta
- Pi Beta Phi
- Sigma Gamma Rho
- Sigma Lambda Upsilon
- Zeta Phi Beta
- Zeta Tau Alpha

Student Activities Council. The Student Activities Council (SAC) is an entirely student-run organization with the goal of providing quality events for Old Dominion University. Films, special events, concerts and Homecoming are SAC committees that are open to all students. Committee members help in planning and organizing events in their area.

Student Honor Council. Student members of the Honor Council generate interest in and awareness of the Old Dominion University Honor System. In addition, the Council provides representatives to serve on student conduct committee appeals hearings.

The National Honor Society of Phi Kappa Phi. The Old Dominion University Chapter of Phi Kappa Phi recognizes and honors superior scholarship in all academic disciplines. The Society hosts the Annual Academic Honors and Awards program and provides scholarships for academic excellence. Membership in the Society is by invitation only, which requires both superior scholarship and good character as criteria.

Student Newspaper. Students at Old Dominion University publish a
weeklly newspaper, The Mace and Crown. In addition to keeping the campus informed, the University newspaper provides students the opportunity to develop skills in writing, photography, advertising, and management. The office is located at 2101 Webb Center, 683-3452.

Student Radio Station. WODU, the student-operated campus radio station, serves two main purposes: providing experience for students interested in broadcasting, and entertaining and sharing relevant information with the student population. WODU helps students develop their skills in all areas of broadcasting, including management, marketing, engineering, and news and sports reporting. The radio station is located at 2102 Webb Center, 683-3441.

Student Senate. The Student Senate is involved in many topical issues touching all areas of University life. Students may serve in University government as elected senators or as volunteers on Student Senate committees. The Student Senate is open to all students of Old Dominion University. Information about elective and volunteer positions is available from the Student Senate Office, 1050 Webb Center, 683-3438.

Yearbook. The Laureate, Old Dominion University’s yearbook, allows students the opportunity to become involved in the promotion, planning, distribution, and production of a quality yearbook publication. The Laureate offers experience in areas such as photography, marketing/finance, copy/layout, and art design. Volunteer as well as paid positions are available in this organization and all students, whether experienced or new to yearbook production, are welcome as members. The office is located at 2105 Webb Center, 683-6019.

Athletics

Old Dominion University’s athletic program is among the most successful in the United States, boasting 31 team and individual national championships, including three in women’s basketball, nine in field hockey, 14 in sailing, a men’s basketball Division II title, three individual wrestling Division II national championships, and one women’s tennis clay court national crown.

The Department of Intercollegiate Athletics is the home for Old Dominion University’s 16 varsity athletic programs for men and women. Old Dominion University offers competitive programs for student-athletes in the following sports: men’s and women’s soccer, field hockey, men’s and women’s sailing, men’s and women’s basketball, wrestling, men’s and women’s swimming and diving, women’s lacrosse, men’s and women’s golf, men’s and women’s tennis, and baseball.

Old Dominion University is a Division I member of the National Collegiate Athletic Association (NCAA) and the Colonial Athletic Association (CAA).

All full-time enrolled students are invited to attend intercollegiate athletic events free of charge. Beginning five days in advance of a regular season men’s or women’s basketball game, an Old Dominion ID card may be used to pick up student general admission tickets at the Athletic Ticket Office in the Constant Convocation Center, Athletic Administration Building, Webb Center, and Residence Hall information desks. At each men’s and women’s basketball game, an Old Dominion ID and a ticket must be presented at the student gate entrance of the Constant Convocation Center. For soccer, baseball, tennis, and other special athletic events, students are admitted at the gate by showing their current student ID card. For more information, call the Athletic Ticket Office at (757) 683-4444 (Constant Center), (757) 683-5484 (Athletic Administration Building), or check out the athletic website at www.odusports.com.

In addition, Old Dominion University provides students with a variety of recreational and intramural activities through its Recreational Sports Office. For more information on these activities contact the Recreational Sports Office at (757) 683-3384.

Housing

The Office of Housing Services offers a variety of living accommodations for Old Dominion University students. Three buildings favor the traditional resident hall concept with double rooms sharing a full bath in a suite arrangement. Additional options available to upper-class and graduate students include two-bedroom apartments and single occupancy rooms in Monarch House. All accommodations are air-conditioned and carpeted.

Since students require a variety of environments, on-campus housing provides an assortment of living options: single-sex wings, coed wings with single or double suites, quiet study, honors floor, graduate housing, and accommodations for disabled students.

Two dining centers provide meals for on-campus residents. Residence hall rates include a meal plan. Residents of the apartments or the Monarch House may purchase an optional meal plan.

For further information about living on campus contact: Office of Housing Services, 4701 Powhatan Avenue, Suite G-1, Norfolk, Virginia 23508 or call (757) 683-4283.

G. William Whitehurst Hall. Overlooking the Elizabeth River, this six-story building houses 616 students in air-conditioned, carpeted, fully furnished rooms. There are two students in each room, and two rooms share a bathroom in a suite arrangement.

Powhatan Village. Each of these two bedroom apartments is air-conditioned, furnished and has one-and-a-half baths, a full kitchen, a carpeted dining and living room, a private entrance, and provisions for disabled students. The apartments are located near the Health and Physical Education Building and house 748 students with four students to each apartment. Residents also have the convenience of remaining in the apartment during University holidays and breaks.

University Village. These one-, two- and four-bedroom fully furnished apartments are available to ODU students on a 12-month lease arrangement. Each fully furnished apartment offers full kitchen appliances, private bedrooms, central laundry facilities, convenient parking, independent heat and air controls, and security systems. Over 900 bedrooms are available through the University Village leasing office at 1016 W. 45th Street, Norfolk, VA 23508 or email at oduvillage@ambling.com.

Monarch House. A unique environment located in Gresham Hall, this option is open to graduate students or undergraduates over 21 years of age with a 3.00 or better grade point average. Residents have single-room accommodations and their meal plan is optional. Every room in the Monarch House has a microwave and a 4-cubic-foot refrigerator. Residents have the convenience of remaining in the House during University holidays and breaks.

Residence Life. The residence hall environment encourages the exploration of new ideas, behaviors, responsibilities, and ways of interacting with other individuals. Living on campus provides opportunities to build friendships and develop a sense of group belonging. Students are encouraged to explore independence and autonomy within the context of responsible citizenship and mutual respect. Please look at the website at http://web.odu.edu/webroot/orgs/STU/HS/housing.nsf.

Off-Campus Housing. Student Services for Off-Campus Students is located in 1104 Webb Center and provides an off-campus housing information system free to all University students. Those desiring off-campus housing may use the system to locate apartments or other accommodations and to find roommates. The office serves as a clearinghouse for general information on off-campus life. The housing information system can also be accessed via the web at web.odu.edu/offcampushousing.

Student Health Services

Old Dominion University Student Health Services is accredited by the Accreditation Association for Ambulatory Health Care, Inc. The Health Center is located at 1007 South Webb Center, (757) 683-3132, Facsimile (757) 683-5930.

Student Health Services provides primary outpatient care and health education for Old Dominion University students. These services include medical care for acute illness and minor injury, routine health care, preventive health care and family planning. Student Health Services also provides referrals to health care providers in the local community for services beyond the scope of the campus.

When necessary, bed care is available for brief daytime observation periods or until transfer to an acute facility can be arranged. Laboratory testing and x-rays are done at the student’s or family’s expense. Full-time campus students should complete the immunization requirements before coming to school. These immunizations are done at the student’s expense.

Within the office of Student Health Services is the Health Education Program. Health Education provides Old Dominion University students with information, education, and programs to address their health concerns and needs. Health Education focuses on the whole person and seeks to engage students in educational, experiential, and service learning opportunities to illustrate the importance of the various dimensions of a healthy lifestyle.

Health Education is responsible for campus-wide programs to prevent alcohol and drug abuse among students. Call (757) 683-5927 to speak with a health educator.

All full-time and part-time students are encouraged to make provision for payment of charges for health services not provided by Student Health Services. The University may require health insurance for all students on the Norfolk campus in the fall of 2005. International students are also required...
to have health insurance. See the Student Health Services web site for information regarding health insurance: www.odu.edu/studenthealth.

All entering full-time Norfolk campus students (undergraduate, graduate, transfer, and English Language Center students) are required to complete the Tuberculosis Risk Assessment section on the health history form submitted to Student Health Services. Each student determined to be a part of a high-risk population for tuberculosis must present the results of a tuberculin skin test (Mantoux PPD) or chest x-ray to Student Health Services within six months prior to matriculation at Old Dominion University. Any student with symptoms of active tuberculosis will be required to test immediately.

All entering full-time Norfolk campus students are required to have immunizations up to date, including the meningitis vaccine or completion of the meningitis waiver form to indicate they choose not to vaccinate against meningococcal disease. Forms may be accessed through the Student Health Services website at http://www.odu.edu/studenthealth.

Career Management Center

The Career Management Center (CMC) offers a comprehensive array of career programs for students under the auspices of the Career Advantage Program (CAP). CAP is a series of career-related events and services designed to include a credit-bearing practical work experience related to a student’s major. This practical experience may take the form of an internship, cooperative education experience or a class containing a real-world, hands-on project. CAP requires students to explore their options, experience success, and engage in the career planning process from the time they first begin their studies at Old Dominion University. Recognizing that all students do not follow the same path, the program is designed to meet the needs of traditional, non-traditional, transfer, commuter, and distance students alike.

The Student Employment Program assists individuals locate part-time and seasonal work on or off campus, including federal work-study positions for those who qualify. The Job Posting Unit advertises jobs of all types, including permanent full-time positions, electronically through eRecruiting. This powerful interactive web-based system, available free to students, contains a database of student and employer information, career information, a career event calendar and interview schedules. It is also the primary tool used by the CMC to communicate with students.

Counseling and discovery tools are available to assist in major and career path selection. Each college has an experienced professional who offers career assistance to students at all levels. The Colleges of Business and Public Administration and Engineering and Technology maintain full service CMC Satellite Offices and part-time office hours are available in the Colleges of Arts & Letters, Education, and Sciences.

Cooperative education and internship experiences are available at the junior, senior and graduate levels. These programs allow students to gain valuable experience related to their major, while testing out possible career choices. All students are encouraged to participate in one or more practical experiences.

Professional seminars in resume writing, job search strategies, interview skills, salary negotiation and other career-related topics are offered throughout the year. These are complemented by classroom and group presentations and special career events, such as employer information sessions, the employer sponsored seminar series “Career Advice and a Slice,” Career Information Panels, Etiquette Dinners, etc.

General job fairs are held twice a year and are supplemented by specialized fairs for specific populations, such as a teacher fair and a summer job fair. Graduating students can also take advantage of the On-campus Recruiting Program, which provides the opportunity to interview with employers for entry-level positions.

Students seeking additional career guidance may select a mentor through the Alumni Mentor Program, created in partnership with the Alumni Association. Potential mentors in every discipline and from all over the nation and the world are available to students via eRecruiting.

Many of the programs and services available on campus are also offered on-line through the CMC website, eRecruiting, and the new Cyber Career Center. The CMC has developed this exciting new opportunity as part of the any-time, any-place virtual career center model for students and alumni who prefer or require assistance from a career professional through electronic means. The Cyber Career Center provides career assistance from a distance, replicating face-to-face services through interactive media, identifying career and job-related web sites, and critiquing Internet information through established guidelines.

More information is available via the Internet at www.odu.edu/cmc, by calling 757-683-4388, or by visiting the CMC at 2202 Webb Center North.

Campus Services

Campus Information Center. The Campus Information Center is a clearinghouse for information on University services, procedures, and activities. Designed to help students deal more effectively with the structure of a large university, the center offers information about on- and off-campus life and provides referrals to the resources best able to meet student needs. The services of the center are available to the students, faculty, staff, and general public. The Campus Information Center, located in the lobby of Webb Center, can be reached by calling (757) 683-5914.

Disability Services. Disability Services is committed to creating access to higher education for students with disabilities. Reasonable accommodations are made for students with visual, hearing, mobility, learning and other impairments. Specific information about services may be obtained by calling (757) 683-4655. New students who desire assistance are expected to contact the office at least 45 days before registration to make arrangements. Currently enrolled students need to make arrangements for accommodations as soon as they have pre-registered for a semester.

Services for Off-Campus Students. In addition to serving the needs of individual off-campus students, the Campus Information Center promotes University awareness of off-campus students’ concerns and provides a wide range of programming and information on general subjects, such as personal safety. More information on assistance for off-campus students is available from Services for Off-Campus Students located behind the Campus Information Center in the Webb Center Lobby.

Because off-campus concerns can interfere with the commuter student’s ability to participate in the learning opportunities of the University, the Campus Information Center provides information and assistance in a number of critical areas, including the following: transportation information and ride-share system, off-campus housing listings, legal referrals, child care referrals, Commuter Involvement Program, Good Morning Commuters, and the Car Assistance program. Students can visit the off-campus housing web site at web.odu.edu/offcampushousing.

Advising Services. The purpose of Advising Services is to assist freshman and transfer students who are undecided or who need additional advising support in making a successful transition into the University and into selection of a major. This is accomplished through advising, counseling and the teaching of University Orientation and Career Planning courses. The staff is concerned with aiding students in developing and evaluating their academic and career plans, and providing services to enhance students’ academic success. The staff also advises students in choosing courses appropriate to the educational and career goals they are considering. Advisors in the department work with students individually and in small groups. Additional programs and services are offered throughout the year addressing a variety of topics related to academic success, choosing a major and career development. Advising Services also acts as a source of information for students in regard to academic policies and procedures and other student services and administrative offices of the University. Advising Services is located in 1504, first floor North Mall of Webb Center; the phone number is 683-3699; http://web.odu.edu/..advising.

Counseling Services. The primary purpose of Counseling Services is to assist students with the transitions and changes they encounter during their college years. The staff helps students to better understand themselves and their potentials and to enhance problem-solving skills. The staff also lend support and assistance during times of crisis.

Counseling Services offers personal assessment, short-term individual and small group counseling, crisis intervention, referral for psychiatric services or long-term counseling focused on solving problems, and a variety of educational programs that promote personal, academic and career development. Consultation services are also available to student organizations, faculty and staff.

For more information, come to 1526, first floor North Mall of Webb Center or call phone 683-4401; http://web.odu.edu/counsel-

International Students. More than 1,150 international students are enrolled at the University. More than 100 foreign countries are represented in the University community. The University highly values these students and provides an extensive range of services and programs designed to meet their educational, cultural and social needs. In addition, there are several student organizations with special emphasis on international issues to encourage understanding between Americans and international students. As a result, these students are given many opportunities to actively participate in all facets of University life and to share their culture with the University community.

Women’s Center. Serving the campus since 1976, the Women’s Center (located in Webb Center, South Wing, Suite 1000) offers programs and services to address the special challenges and opportunities women students encounter related to their personal and academic success. The
center has many functions for all college students, and has specific services for adult women returning to college, including support groups and social and educational programs. One major component of the Women’s Center is to provide education, awareness and prevention programs and student support services around such issues as sexual harassment, sexual assault and campus safety under the auspices of the Sexual Assault Free Environment (SAFE) program. The Women’s Institute for Leadership Development (WILD) offers an opportunity for women students to develop their leadership skills through training modules that include theory and practice. Additional programs and services are offered throughout the year addressing a variety of topics related to women’s academic and personal success, including a celebration of Women’s History Month each March.

The center has a library and reading room and provides information and referrals to a variety of services of particular interest to women. All services of the center are open to women and men. For more information, please call 683-4109 or visit www.odu.edu/womenscenter.

Student Support Services. Student Support Services is federally funded and provides academic support services for Old Dominion University students who meet the program’s enrollment criteria established by the U.S. Department of Education. The program is designed to increase the retention and graduation rates of low-income, first-generation college students and students with disabilities. The following support services are available to participants on a continuing basis: academic, personal, social, career and financial aid advising; tutorial assistance; small group instruction in writing and math; note taking for students with disabilities; and cultural enrichment activities.

Upward Bound Program. The federal TRIO Upward Bound Program at Old Dominion University is federally funded to serve low-income and first-generation college bound students. The program provides academic support and counseling services to develop the skills and motivation in participants who need assistance in order to complete high school and enter post-secondary school.

The program’s services are offered in two phases: an academic year phase and a summer residential phase.

During the academic year phase, students meet on campus on Saturdays to receive small group and individual tutoring in math, English, computer applications, foreign language, social studies, basic skills, and science as well as career, educational, and personal counseling.

The summer residential phase is a six-week experience. Students live on campus and receive classroom instruction in subject areas tutored in during the academic year phase. Cultural enrichment activities are also provided during the two phases of the program.

Only students from Norfolk and Portsmouth who meet the program’s U.S. Department of Education eligibility guidelines can qualify to participate.

Academic Skills Programs. The Academic Skills Programs serve students who need supplemental work in preparation for college-level writing and mathematics. Pass/fail grades are assigned for developmental courses. Credit does not count toward the fulfillment of degree requirements. The developmental math and writing programs assess students’ entry-level skills.

Dining Services. The Old Dominion University Dining Services is responsible for many operations across campus. Webb Center is home to a wide range of dining options including Webb Cafe, the Food Court and Catering Services. The Food Court has six separate operations, including Taco Bell, Corner Market, Grille Works, Pizza Hut, Gourmet Coffee, and Sweet Retreat. The Webb Cafe features home-style entrees and vegetables and also Chick-Fil-A. Starbucks’ shops are available in Webb University Center and Batten Arts and Letters lobby. Hours and products available vary depending on the academic calendar.

Residence Hall dining centers are available to all cash, meal plan and Monarch Plus Card customers.

The Dining Services Catering Department offers services from coffee set-ups to extensive dinner menus and everything in between.

Hours of Operation. Webb Cafe is open for breakfast and lunch from 7:30 a.m. until 2:30 p.m. Monday through Friday. They serve dinner from 3:00-7:00 p.m. Monday through Thursday. The Food Court is open for lunch from 10:00 a.m.-3:00 p.m. Monday through Friday.

Old Dominion University Bookstore. The primary purpose of the Bookstore is to serve the students of the University by making available books and supplies required for course work. In addition, the store maintains wide selections of general books, college supplies, and art materials. For information and operating hours call 683-0048.

Webb Center. Webb Center is the hub of the campus activities. It houses a wide variety of student services, health service, bookstore, dining services, a bank, ATM, travel agency, and other stores.

Student Disciplinary Policies and Procedures

I. Preamble

Students are expected and required to assume the responsibility for their own behavior and to abide by the laws of the Commonwealth of Virginia and the rules and regulations of Old Dominion University. A student who violates the following general standards of conduct may be subject to administrative actions (as defined in Section III-G), or to one or more disciplinary sanctions (as defined in section VI), whether or not civil authorities choose to prosecute.

II. Authority

Old Dominion University is governed by its Board of Visitors and supported by the Commonwealth of Virginia. The Board is specifically authorized to regulate student conduct by state statute.

III. Definitions

As used in this document, the following terms shall have the meanings ascribed to them as follows:

A. Vice President for Student Services: The University official who has primary responsibility for the administration of all student discipline. He/she serves as the appeals officer for cases which have been heard by the Student Conduct Committee. The vice president may delegate all or part of this responsibility to such other persons as he/she deems appropriate.

B. Code of Student Conduct: The statement of rules and regulations governing student conduct as established by the Board of Visitors and contained in Section IV herein.

C. Chair: The head of the Student Conduct Committee and presiding officer at Student Conduct Committee hearings; a vice chair shall assume the duties of chair, when the chair is unavailable.

D. Student: A person who (1) has been admitted to or has enrolled or intends to enroll at the University, and (2) has not completed a program of study for which he/she was enrolled. Student status continues whether or not the University’s academic programs are in session.

E. The Student Conduct Committee: A faculty/students judicial body authorized to hear and adjudicate alleged violations of the Code of Student Conduct.

F. Plagiarism: A student will have committed plagiarism if he or she reproduces someone else’s work without acknowledging its source; or if a source is cited which the student has not cited or used. Examples of plagiarism include: submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; making simple changes to borrowed materials while leaving the organization, content, or phraseology intact; or copying material from a source, supplying proper documentation, but leaving out quotation marks. Plagiarism also occurs in a group project if one or more of the members of the group does none of the group’s work and participates in none of the group’s activities, but attempts to take credit for the work of the group.

G. Administrative Action: The issuance of an oral or written warning, admonition, reprimand, and/or use of counseling procedures.

H. University Hearing Officer: The University official or officials assigned by the vice president for student services to conduct disciplinary proceedings and administrative action.

I. Disciplinary Proceedings: Those proceedings initiated by a notice of charges and governed by the provisions of Section VIII. The term Disciplinary Proceedings does not include Administrative Action.

J. Honor Council: A student organization which educates members of the academic community about the University’s standards of academic integrity. The Council also monitors student adherence to these standards, and provides panel members to serve on the Student Conduct Committee.

IV. Honor Code

“We, the students of Old Dominion University, aspire to be honest and forthright in our academic endeavors. Therefore, we will practice honesty and integrity and be guided by the tenets of the Monarch Creed. We will meet the challenge to be beyond reproach in our actions and our words. We will conduct ourselves in a manner that commands the dignity and respect that we also give to others.”

V. Code of Student Conduct

University students shall conduct themselves in a manner compatible with the University’s educational mission and shall be disciplined.
only for misconduct adversely affecting that mission. Any student who conspires to commit, or who participates in an action that results in a violation of the Code of Student Conduct, shall be bound by the acts of every person participating in such an action and shall be disciplined accordingly. Specifically, students are subject to disciplinary action for the following:

A. Academic dishonesty, including but not limited to plagiarism and all forms of academic cheating, and failure to report known violations of the honor pledge;
B. Forgery, alteration, or misuse of University or other official documents, records, or identification;
C. Knowingly furnishing false information to the University;
D. Obstruction or disruption of University operations;
E. Obstruction or disruption of University-authorized activities;
F. Physical or violent abuse of any person on property owned or controlled by the University, or at functions sponsored or supervised by the University;
G. Conduct that threatens or endangers the health or safety of any person, including oneself, on property owned or controlled by the University or at functions sponsored or supervised by the University;
H. Theft of or damage to University property;
I. Theft of or intentional damage to private property on premises owned or controlled by the University;
J. Unauthorized entry of University facilities or property;
K. Unauthorized access, use or misuse of University property including, but not limited to: attempting to leave the library with library materials which have not been properly borrowed; unauthorized use or misuse of computer equipment, computer accounts, computer software and hardware; or misuse of University telephones;
L. Violation of University regulations or campus policies approved by either the Board of Visitors or the president and described in official University publications;
M. Use or possession of alcohol, marijuana, narcotics, illicit drugs, or drug paraphernalia (except as expressly permitted by law or University regulations) on property owned or controlled by the University;
N. The sale or distribution of marijuana, narcotics, or dangerous drugs (except as expressly permitted by law) on property owned or controlled by the University or at functions sponsored or supervised by the University;
O. Violation of University residence hall policies;
P. Lewd, indecent, or obscene displays or conduct on property owned or controlled by the University or at functions sponsored or supervised by the University or University-related organizations;
Q. Drunken or disorderly behavior on property owned or controlled by the University or at functions sponsored or supervised by the University or University-related organizations;
R. Intimidating behavior directed toward any student, faculty member, staff member, or administrator;
S. Failure to comply with the directions of a University official acting in the performance of his or her duties;
T. Violation of the University's firearms policy;
U. Circulating a report or warning that property under University control or supervision may be subject to a bombing, fire, crime, emergency, or other catastrophe, knowing that the report or warning is false;
V. Tampering with safety equipment or the inappropriate use or possession of safety equipment on property owned or consigned by the University;
W. Giving false testimony or evidence at any official University hearing or to any University official;
X. Conduct deemed unlawful by the criminal statutes of the Commonwealth of Virginia or the United States of America and conduct that endangers or threatens the security of the University community;
Y. Violations of the conditions of a sanction imposed through University disciplinary procedures;
Z. Violation of the University's sexual assault policy;
AA. The unreasonable use of complimentary materials and/or supplies provided for the benefit or consumption of the University community;
AB. Retaliation.

VI. Violations of Residence Hall Rules and Regulations

It is recognized that living in groups requires a certain amount of tolerance and conformity by all concerned. Rules controlling conduct within housing owned or controlled by the University are promulgated by the Office of Residence Life to enhance the freedom and comfort of everyone living in the residence halls. These rules, along with procedures for their enforcement and applicable sanctions, are published in the Residence Hall Handbook available from the Office of Residence Life.

The Old Dominion University Code of Student Conduct and disciplinary procedures apply to all students, including those who live in the residence halls. Alleged violations of the Code by residence hall students will be forwarded to the vice president for student services or his/her designee.

VII. Sanctions

A student who violates the Code of Student Conduct may be subject to the following sanctions:

A. Restitution
   Restitution may include payment for damage to University property or facilities, payment for damage to the property or person of a member of the University community, and repayment of misappropriated or misused University funds.

B. Disciplinary Probation
   Disciplinary probation for a period of fixed duration during which the fitness of a student to continue at the University is evaluated. Disciplinary probation serves as a warning to the student that future violations of the Code of Student Conduct may result in more serious sanctions including suspension or dismissal. Disciplinary probation may include mandatory conditions such as the following by way of illustration:
   - Exclusion from privileged or extracurricular activities at the University;
   - Suspension of residence privileges in property owned or controlled by the University;
   - Mandatory participation in classes, and/or other lawful activities deemed appropriate, as a means of reestablishing the student in violation of the Code of Student Conduct.
   - A fine of an amount specified by the hearing officer or Student Conduct Committee and approved by the vice president for student services.

In cases where misconduct is the result of abuse of alcohol or other drugs, mandatory alcohol or drug education may be a required condition of the probation.

C. Disciplinary Suspension
   Disciplinary suspension is the temporary separation of a student from the University.

D. Disciplinary Dismissal
   Disciplinary dismissal is the permanent separation of a student from the University.

E. Summary Disciplinary Dismissal
   Summary disciplinary dismissal is the immediate separation of a student from the University and is authorized by the vice president or a designated representative when the continued presence of the student at the University constitutes a danger to the health, safety, or welfare of the University community. At the time a student is summarily dismissed, the student shall be informed of his or her right to a hearing in accordance with the procedures contained in section VII below. Such hearing shall be held without undue delay and the student shall remain dismissed until the hearing determines the student's status.

F. Minimum Sanctions for Alcohol Violations
   First Offense: Probation for one year, $50.00 fine, mandatory workshop, parental notification for underage offenses.
   Second Offense: Probation for an additional year, $100.00 fine, additional workshop and/or counseling, parental notification.
   Third Offense: Suspension for one semester, parental notification.

G. Minimum Sanctions for Illegal Drug Violations
   First Offense: Dismissal from University housing and disciplinary probation for one year; $50.00 fine, mandatory workshop and parental notification.
   Second Offense: Disciplinary suspension.
   Persons found to be involved in the sale of illegal drugs will be subject to permanent dismissal from the University.
   Sanctions of suspension, dismissal and any sanction resulting from an act of academic dishonesty will be recorded on the student's official University transcript.

Other sanctions will be recorded in the student's discipline file.
which will be retained by the hearing officer for a period of five years. With the exception of cases of academic dishonesty, records of disciplinary probation will be retained for one year after the conclusion of the probationary period.

VIII. Disciplinary Procedures
A. Administrative Action Proceedings
Administrative action proceedings are informal investigations conducted by a University hearing officer for alleged violations of University regulations by a student or a student organization. Administrative action may be taken by the hearing officer without instituting disciplinary proceedings, and such action shall be final and not subject to further hearing or appeal. A disciplinary penalty may not be imposed without first instituting disciplinary proceedings pursuant to Section VIII-C.

B. Academic Dishonesty Procedures
1. Faculty members should clearly identify course specific standards which interpret University, college, and departmental policies related to academic integrity. These explanations should appear in the course syllabus and in all other explanations of course requirements. Faculty should require the inclusion of the honor pledge on all academic work submitted for grading.
2. Faculty members who discover evidence of academic dishonesty may arrange to meet with the student(s) suspected of the alleged infraction or forward the case to the vice president for student services. At any time faculty members may choose to consult with the vice president for student services or the University hearing officer.
3. If the student(s) acknowledge(s) the act of academic dishonesty, and the faculty member is satisfied that the incident can be effectively resolved with a grade sanction:
   a. The faculty member will assign either an F in the course, or an F for the assignment or exam during which the cheating occurred; and
   b. A written summary of the incident will be forwarded by the faculty member to the University hearing officer.
   c. The hearing officer will contact the student to arrange a conference to review the Standards of Conduct related to academic dishonesty.
   d. If the student is currently not on disciplinary probation, the student will be placed on disciplinary probation for one calendar year.
   e. If the student is currently on disciplinary probation, or if the student has previously acknowledged an act of academic dishonesty and received a grade sanction as a result, disciplinary proceedings will be instituted in accordance with section VIII-C to determine the appropriate disciplinary sanction. Such sanction may include suspension or dismissal from the University.
   f. All official disciplinary sanctions, including grade sanctions, which are assigned to a student as a result of an act of academic dishonesty, will be recorded on the student’s official University transcript.
4. In the case of disciplinary sanction of Probation for Academic Dishonesty, a student will be given the option to petition the vice president for student services to have the “Academic Dishonesty” notation removed from his/her transcript if:
   a. Three years have elapsed since the sanction was imposed.
   b. The student has successfully completed the University’s “Academic Integrity Matters” Seminar.
   c. The student has not been found in violation of other Honor Code infractions during the student’s tenure at the University.
   d. There is evidence that the academic dishonesty was not a premeditated act.
5. Students may file a grade appeal if a grade penalty for alleged academic dishonesty violation occurs without proper adherence to the above procedures.
C. Institution of Disciplinary Proceedings
Disciplinary charges brought against a student or a recognized student organization shall be adjudicated in the following manner:
1. Upon written notice of an alleged violation of the Code of Student Conduct disciplinary proceedings shall be instituted by a University hearing officer by the issuance of notice of charges. The written notice of complaint may be initiated by faculty, staff, students or through a campus police summons.
2. The accused student will be informed of the alleged violation(s) in writing. The vice president will normally forward relevant evidence to a pre-hearing officer who will promptly schedule a pre-hearing conference with the accused student. The vice president may choose to bypass the pre-hearing conference if it is clear from the evidence that no disciplinary action is warranted.
   a. To plead in violation to the charges, waive all rights to a formal hearing and appeal and accept a sanction imposed by the hearing officer; or
   b. To request a formal hearing with the right to appeal.
3. Students who fail to attend the pre-hearing conference will be considered in violation of the charges and an appropriate sanction will be imposed. Students who fail to attend a formal hearing will forfeit their right to appeal.
D. Formal Hearing Procedures
1. The notice of charges and all other written notices shall be delivered by the method deemed most effective by the hearing officer to the student’s or organization’s address or e-mail address as it then appears on the official records of the University. If the address is not current, other reasonable attempts will be made to deliver the notice. The notice shall include the portion of the Code of Student Conduct allegedly violated; the reported circumstances of the alleged violation; and request the student or organizational representative to appear at a specified time, date and place for a hearing. Failure to have a current address on record with the University shall not invalidate the notice. If the notice is for a formal hearing, a copy of all evidence available at the time of the notice will accompany the notice as well as names of potential witnesses. The accused student will have the opportunity to review all evidence as well as ask questions about the charges and the options available for resolution. During this conference the student will be presented with the following options:
   a. To plead in violation to the charges, waive all rights to a formal hearing and appeal and accept a sanction imposed by the hearing officer; or
   b. To request a formal hearing with the right to appeal.
2. If the notice of charges requests an appearance at a hearing, and if a student fails or refuses to appear, the University hearing officer may, after such investigation that is deemed sufficient: dismiss the charges; take administrative action; or impose a disciplinary penalty.
3. Requests for continuance must be timely and made by the student in writing to the hearing officer, who may reschedule the hearing if the request is timely and for good cause. If the hearing officer takes administrative action, the accused student or organization shall be notified in writing of such action and such action shall not be subject to further hearing or appeal. If the hearing officer imposes a disciplinary sanction, the student or organization representative shall be notified in writing of such action. Appeals to disciplinary sanctions imposed at a hearing held in the absence of the accused student or organizational representative shall follow the procedures outlined in Section VIII.C.6 of these regulations.

4. When an accused student or organizational representative appears in response to the notice of charges, the hearing officer shall review the facts of the alleged violations, and the names of witnesses then known to the hearing officer. The student or organizational representative shall be advised that no response is required and that any statement made shall become a part of the official evidence of the case. The accused may advise the hearing officer of any witnesses or evidence supporting the accused's position. The hearing officer shall also advise the accused that if any new evidence is discovered during an investigation subsequent to the hearing, it will be shared with the accused. The accused will have an opportunity to respond to the evidence. In certain cases the hearing officer may be assisted by an advisor.

5. After the hearing with the student or organizational representative and such further investigation as the hearing officer deems necessary, the hearing officer shall proceed as follows: 1) If the hearing officer determines that the alleged violation is not supported by the evidence, the charges shall be dismissed and the accused student notified. 2) If the hearing officer is satisfied that the violation occurred as alleged, but that no disciplinary sanction should be imposed, the hearing officer may levy administrative action and notify the student accordingly. 3) If the hearing officer is satisfied that the violation occurred as alleged and that a disciplinary penalty should be imposed, the hearing officer shall notify the accused student or organizational representative, describing the sanction which the hearing officer will impose.

6. The accused may accept the decision and sanction(s) proposed by the hearing officer and waive her/his right to any further hearing or appeal. Or, the accused may reject the decision of the hearing officer and request an appeal hearing before the Student Conduct Committee as provided for in VII.D.

7. Appeal Procedures: Only students who have attended and participated in their disciplinary hearing have the right to appeal the decision of the hearing officer. The appealing student may remain in class pending the outcome of an appeal. However, if the decision of the hearing officer is upheld, then sanction will be imposed as of the original date unless the panel affixes a different sanction date.

8. An accused student or organization appealing the decision of the hearing officer should file a notice of appeal to the Student Conduct Committee via the Office of the Vice President for Student Services. Such an appeal must be physically received in the vice president's office within seven business days from the date of the letter containing the findings in the case. The appeal must include the specific grounds for the appeal, and the names of witnesses that the accused student intends to call for the hearing; and it must be personally signed by the student or an organizational officer. The notice of appeal shall contain, at a minimum, a statement of grounds for appeal and a summary statement of the facts supporting such grounds. Grounds for appeal include:

   a. A claim that the decision was not made in accordance with prescribed procedures and identifying the procedures which were not followed;
   b. A claim that the sanction(s) imposed was (were) inappropriate or overly harsh; (sanctions of reprimand and disciplinary probation, except in cases involving restitution, fines or academic dishonesty, are not subject to appeal.)
   c. A claim that the decision was clearly erroneous;
   d. New evidence, not available in a previous hearing, which could exonerate the accused student.

9. Rules of Procedure:
   a. In cases involving more than one student, the hearing officer may consolidate the cases for hearing, but shall make separate findings for each accused student.
   b. The accused student may have an adviser of the student's choice present during the hearing. Generally, the adviser shall be present for consultation purposes only and shall not be permitted to speak on the student's behalf. However, an adviser may be permitted to address the committee at the discretion of the hearing officer. If an accused student elects to be represented by a third party adviser, the accused must provide a signed letter designating that person as their official representative before the University can communicate otherwise privileged information to the adviser.
   c. Rules of common courtesy and decency shall be observed.
   d. The questioning of any person appearing before the hearing officer by any individual participating in a hearing shall not be in a badgering, unduly repetitious manner. It shall be at the discretion of the hearing officer to curtail a participant's further opportunity for questioning if such behavior occurs.
   e. Any person may be dismissed from the hearing who interferes with or obstructs the hearing or who fails to abide by the rulings of the hearing officer.
   f. The hearing officer shall have the right to call additional witnesses, require the presentation of additional evidence, and require additional investigation.
   g. A taped or stenographic record of a hearing shall be maintained. The notice, exhibits, taped or stenographic record shall become the record of the case and shall be filed in the Office of the Vice President for Student Services. This hearing record shall be retained for a period of no more than five years.
   h. All hearings shall be closed.

E. The Student Conduct Committee
The Student Conduct Committee is the appellate body within the University disciplinary system. It shall hear all appeals of disciplinary sanctions imposed by a hearing officer. It shall consist of: faculty members appointed by the vice president from a list of nominees submitted by the Faculty Senate or from a list of faculty who have previously served; students appointed by the vice president from a list of nominees submitted by the Student Senate or from a list of students who have previously served; and a chair from the faculty appointed by the vice president. Student nominees should consist primarily of members of the Honor Council. The term of office for these positions shall be one year and shall be renewable.

In order to provide for the prompt consideration and disposition of all cases, appeal hearings shall be conducted according to the following procedures:

1. The vice president shall initiate a Student Conduct Committee appeal hearing by notifying the chair of the need for a hearing and advising him or her of a proposed hearing date. Upon receiving such notice, the chair shall designate two faculty members plus one alternate and two student members plus one alternate of the Student Conduct Committee to serve with the chair on a hearing panel. The chair will preside, but will not vote, except in the event of a tie.

2. The vice president shall provide written notice to the student who filed the appeal including the date, time, and place of the hearing. This written notice will also contain a statement of the grounds for appeal to be considered by the committee, the names of witnesses the hearing officer will call to the hearing, and a statement of procedural protection afforded the student as described in section VIII.D.B. This notice shall be delivered, by the most effective means available as determined by the vice president, to the student's address currently on record with the University. If the student's address is not current, other reasonable attempts will be made to deliver the notice. Failure of the student to have a current address on record with the Uni-
The appeal hearing shall be limited to testimony and evidence related to the grounds for appeal as stated by the accused student. The hearing officer will brief the panel on the charges and nature of the case, introducing any evidence and witnesses relevant to the appeal. After the hearing officer has introduced and questioned a witness, the witness may then be questioned by the panel members and the accused student, respectively. The accused student shall then have the opportunity to introduce any evidence and witnesses relevant to the grounds for appeal. After the accused student has questioned such a witness, the witness may then be questioned by the panel members and the hearing officer. At the conclusion of the presentation of evidence, the hearing officer and the accused student shall have the opportunity to make summary statements pertaining to the appeal. The chair shall rule on the relevance of evidence and testimony, if necessary.

At the conclusion of the summary statements, the hearing panel shall recess the hearing and meet in executive session (out of the presence of all parties to the hearing) to determine its findings. The panel shall either recommend upholding the findings of the hearing officer or recommend that the decision of the hearing officer be overturned. If the panel recommends that the hearing officer's decision be overturned, the panel shall recommend either a different finding and/or sanction to the vice president. There shall be no findings to uphold unless a majority of the hearing panel agree that a preponderance of the evidence presented supports the decision of the hearing officer. All hearing panel members are expected to cast a vote. The chair shall not be entitled to vote, except in the case of a tie vote.

Upon making its decision, the Student Conduct Committee shall so advise the vice president for student services in writing within five business days after the date of the appeal hearing. The vice president will review the student's appeal and the recommendations of the Student Conduct Committee.

The vice president shall examine the record of the case and any additional evidence provided. The vice president may interview witnesses to the case, or engage in whatever investigation he/she deems appropriate to fully hear the student's appeal. The vice president shall consider the recommendations of the Student Conduct Committee and may accept or reverse the finding by reducing or increasing the sanctions imposed by the hearing officer.

Within seven working days after receiving the recommendation of the Student Conduct Committee, the vice president will advise the accused student of his/her decision concerning the final disposition of the case.

The decision of the vice president is final.

7. Rules of Procedure in Appeal Hearings:
   a. In cases involving more than one student, the vice president for student services may consolidate the cases for hearing, but the committee shall make separate recommendations for each accused student.
   b. The appealing student may have an adviser of the student's choice present during the hearing. Generally, the adviser shall be present for consultation purposes only and shall not be permitted to speak on behalf of the student. However, an adviser may be permitted to address the committee at the discretion of the chair. If an accused student elects to be represented by a third party adviser, the accused must provide a signed letter designating that person as their official representative before the University can communicate to the adviser otherwise privileged information.
   c. Rules of common courtesy and decency shall be observed.
   d. The questioning of any person appearing before the hearing panel by any individual participating in a hearing shall not be in a badgering, unduly repetitious, or irrelevant manner. It shall be at the discretion of the chair to curtail a participant's further opportunity for questioning if such behavior occurs.
   e. Any person may be dismissed from the hearing who interferes with or obstructs the hearing or who fails to abide by the rulings of the chair.
   f. The hearing officer (at a hearing before the hearing officer) or the chair (at Student Conduct Committee hearings) shall have the right to call additional witnesses, require the presentation of additional evidence, and require additional investigation.
   g. A taped or stenographic record of a hearing shall be maintained. The notice, exhibits, taped or stenographic record, and vote of the panel shall become the record of the hearing. The record shall be maintained. The notice, exhibits, taped or stenographic record, and vote of the panel shall become the record of the hearing. The record shall be maintained.
   h. All hearings shall be closed.

8. The accused is entitled:
   a. To be present at the hearing and hear all testimony presented. If a student, who has been properly notified, fails to appear at the scheduled date, time, and place for the hearing, the panel may hear the case and make its findings in the student's absence;
   b. To examine, prior to the hearing, evidence to be presented at the hearing, to the extent that it is available.
   c. To be provided, prior to the hearing, with the names of witnesses whom the University hearing officer has asked to appear at the hearing;
   d. To question witnesses in accordance with the rules;
   e. To present evidence in accordance with the rules;
   f. To remain silent during the hearing.

F. Additional Procedures in Cases of Sexual Assault

1. The vice president for student services shall schedule special training for the Student Conduct Committee and the hearing officer(s) once each semester covering the University's policies governing sexual assault, and the special needs of the accuser and the accused in these cases.

2. Upon notification of an alleged violation, the accused shall not initiate any contact, directly or indirectly, with the accuser. Retaliation against the accuser or against any witness involved in the case by the accused or others acting on behalf of the accused shall be considered violation of the Code of Student Conduct.

3. During a hearing, no evidence may be presented which pertains to the past sexual history of the accuser or of any witness.

4. During a hearing, unrelated past sexual history of the accused may not be entered as evidence nor discussed in the hearing.

5. The accused and accuser will be notified in writing of the outcome of Disciplinary Proceedings, any sanctions imposed and of the final action taken by the vice president.
I. Policy

A. Policy Statement and Responsibilities

1. Sexual harassment in any situation is reprehensible. It is the policy of Old Dominion University to provide students and employees with an environment for learning and working which is free of sexual harassment whether by members of the same sex or the opposite sex, which is prohibited by Title IX of the Education Amendments of 1972 and Title VII of the 1964 Civil Rights Act.

2. It is the responsibility of University administrators and supervisors to assure that effective measures are taken to implement the procedures outlined in this policy.

3. It is a violation of this policy for any member of the University community to seek gain, advancement, or consideration in return for sexual favors, or to make an intentionally false accusation of sexual harassment.

4. The University’s EO/AA director must be advised of all complaints of reported incidents of sexual harassment. The Office of EO/AA will monitor repeated complaints or reports within the same unit or against the same individual, where appropriately identified, to assure that such allegations are fairly and properly handled.

5. Any person who has been accused of sexual harassment, pursuant to the terms of this policy, who retaliates against his/her accuser in any manner, shall be charged with a violation of this policy which shall be treated as an independent and separate act of sexual harassment.

6. Any member of the University community who is found in violation of this policy will be subject to appropriate sanctions, which may include discharge, expulsion or debarment.

B. Policy Definitions

1. “Work” for the purposes of this policy, means employment-related activities carried out by University employees and University-sponsored activities carried out by volunteers.

2. “Member of the University community,” for purposes of this policy, means student or employee, or an alumnus, alumna, or volunteer involved in any University-sponsored activity.

C. Definition of Sexual Harassment

Sexual harassment is defined as unwelcomed and unsolicited conduct of a sexual nature, physical or verbal, by a member of the University community of the opposite sex, or the same sex, in an official University position when:

1. Another of the University community member’s submission to such conduct is made explicitly or implicitly a term or condition of the employee’s work performance or the student’s academic performance;

2. Another of the University community member’s submission to or rejection of such conduct is used as a basis for an employment decision or an academic evaluation; or

3. Such conduct is known or should have been known to interfere with such person’s work or academic performance, by creating an intimidating, hostile, or offensive working or educational environment.

A variety of sexual conduct directed at another University community member may be considered sexual harassment, including, but not limited to:

- offensive sexual innuendos, advances, propositions, threats, jokes, suggestive comments;

- graphic or degrading comments of a sexual nature about a person’s appearance, whistling in a suggestive manner, obscene gestures;

- uninvited physical contact or touching such as pinching or intentional brushing against the body;

- solicitation of sexual favors through implicit or explicit promises of rewards or threats of punishment.

D. Power Differential, Consent and Sexual Harassment

Consensual romantic and sexual relationships between faculty and student, or between supervisor and employee, while not expressly forbidden, are generally deemed very unwise. A faculty member who enters into a sexual relationship with a student (or a supervisor with an employee) where a professional power differential exists, must realize that, if a charge of sexual harassment is subsequently lodged, it will be exceedingly difficult to prove a defense on grounds of mutual consent.

If conduct of a sexual nature has occurred or is occurring in an apparently consensual romantic or sexual relationship, and, if a complaint of sexual harassment regarding such conduct is filed by the student against the faculty member or the teaching/lab assistant, or by the employee against the University official, then sexual harassment shall be rebuttably presumed in such cases, when:

1. The relationship is between a faculty member or teaching/lab assistant and a student and:

   a. The faculty member or teaching/lab assistant is in a position to determine the student’s grade or otherwise affect the student’s academic performance or advancement; and

   b. The relationship began after the supervisor was in such a position.

2. The relationship is between an employee and a University official who is in a position to supervise the employee or otherwise influence the conditions of the employee’s work and the relationship began after the supervisor was in such a position.

Sexual harassment is presumed under such circumstances because the power differential existing between the faculty member and student or the supervisor and employee may restrict the student or employee’s freedom to choose to enter into the relationship. In order to rebut the presumption of sexual harassment, the faculty member, teaching assistant or other University employee or official who is charged with sexual harassment as a result of conduct occurring in a consensual relationship as described above must be prepared to prove, by a preponderance of the evidence, that the individual claiming sexual harassment entered into the relationship freely and voluntarily.

II. Committee on Sexual Harassment

A. The president will appoint a Committee on Sexual Harassment consisting of individuals with professional training and/or experience such as would qualify them to assist victims of sexual harassment and those accused of violating this policy. The chair of the committee shall be the University’s director of equal opportunity/affirmative action ("the EO/AA director").
members shall be as follows: two faculty members and staff members at large, a staff member from Counseling Services, a staff member from Student Health Services, and a staff member from the Women’s Center. Names of the members of the committee shall be publicized by the University.

III. Procedures for Enforcement of the Sexual Harassment Policy

Sexual harassment complaints can be made according to the procedures outlined below.

Members of the Sexual Harassment Committee shall assist members of the University community who are the object of sexual harassment, or who are accused of violating this policy. Committee members may also assist the EO/AA director in the informal mediation process by their direct involvement.

All student complaints of sexual harassment must be filed within two years from the date the alleged harassment occurred. Complaints by other members of the University community must be made within 120 days from the date the alleged harassment occurred.

A. STEP I

1. Any individual in the University community who believes she or he has experienced sexual harassment as defined in this policy should contact the EO/AA director or a member of the University Committee on Sexual Harassment.

2. The complainant may elect an informal process to mediate the complaint. This process provides an opportunity for the complainant and the accused to resolve the problem in an informal manner, without the necessity of disciplinary action or of the more formal procedures for processing a complaint.

3. The complainant may elect to file a formal complaint. The complainant shall explain, in writing, the nature of the harassment and indicate what remedy she or he seeks. The EO/AA director shall forward a copy of the complaint to the accused member of the University community and the appropriate supervisor/administrator, with a copy of this policy and advise him or her that an investigation of charges will be conducted.

4. The supervisor/administrator, working with the EO/AA Office, shall conduct a prompt investigation of the complaint. During the investigation, the individual accused of sexual harassment must be provided with an opportunity to respond, either orally or in writing, to the complaint.

5. In determining whether the alleged conduct constitutes sexual harassment, the supervisor/administrator will look at the record as a whole and at the totality of the circumstances, such as the nature of the sexual conduct and the context in which the conduct occurred.

6. Upon the completion of the investigation of the complaint, the supervisor/administrator shall submit the findings to the EO/AA director. In conjunction with the EO/AA Office, the supervisor/administrator shall seek to secure a written agreement that satisfies all parties to the complaint. If such an agreement is reached, a copy of the agreement shall be provided to each of the parties involved and the EO/AA director.

7. A resolution by agreement of the parties may include the imposition of a sanction upon the accused individual which the accused individual agrees to accept as a sanction.

8. If the proposed resolution is not accepted by the accused individual, the supervisor/administrator may impose a sanction.

9. The EO/AA director shall approve or modify a sanction or the terms of an agreement.

10. The accuser’s right for redress under this policy shall terminate upon the imposition of a sanction.

11. If an investigation of a complaint exceeds thirty (30) days from the date of receipt by the supervisor/administrator, the EO/AA director shall notify the parties in writing of the progressive status of the investigation and the proposed extension of time needed for completion of the investigation.

12. Other related issues not specifically identified in the complaint may be brought to the attention of the appropriate administrator by the EO/AA director.

B. STEP II

1. Upon conclusion of the administrative review, if the complaint is unresolved and the complainant desires to proceed with the charge, the record of the complaint shall be provided to the chair of the appropriate administrative tribunal listed below.

2. Members of the Committee on Sexual Harassment may advise the complainant and the accused by clarifying and explaining procedures, and promoting an equitable resolution for all parties.

3. The imposition of sanctions shall occur in accordance with applicable University disciplinary and sanction procedures.

C. University Complaint Resolution Procedures

1. A complaint of sexual harassment may be pursued in accordance with the appropriate University complaint resolution procedure:

<table>
<thead>
<tr>
<th>Complainant</th>
<th>Procedure</th>
<th>Contact</th>
</tr>
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<tbody>
<tr>
<td>Student</td>
<td>University’s Discrimination Complaint Procedure or Student Conduct Committee</td>
<td>EO/AA, Hearing Officer</td>
</tr>
<tr>
<td>Faculty</td>
<td>Faculty Grievance Procedure or University’s Discrimination Complaint Procedure</td>
<td>Chair of the Committee, EO/AA</td>
</tr>
<tr>
<td>Classified Employee</td>
<td>University’s Discrimination Complaint Procedure or State Employee’s Discrimination Complaint Procedure</td>
<td>EO/AA, Human Resources</td>
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<tr>
<td>Wage Employee</td>
<td>University’s Discrimination Complaint Procedure or State Employee’s Discrimination Complaint Procedure</td>
<td>EO/AA, Human Resources</td>
</tr>
<tr>
<td>Administrator, Alumnus or Volunteer</td>
<td>University’s Discrimination Complaint Procedure</td>
<td>EO/AA</td>
</tr>
</tbody>
</table>

2. The complainant shall not be entitled to more than one of the procedures for complaint resolution outlined in III.

C.1.

3. The sanctions that may be imposed by the appropriate tribunal shall include but not be limited to:

a. For faculty, administrators, and staff — censure/reprimand, demotion, suspension without pay, or discharge.

b. For students — probation, suspension or expulsion.

c. For other members of the University community— reprimand, temporary or permanent debarment from University functions, activities and memberships.

IV. Sexual Harassment Committee

ReNeé S. Dunman, Chair, Director, Equal Opportunity/Affirmative Action

Rudolph Burwell, Assistant Chief, Public Safety

Julie L. Dodd, Director, Women’s Center

Luisa M. Igloria, Associate Professor, English

Brian Payne, Associate Professor, Sociology and Criminal Justice

Walease M. Reid, Employee Relations Manager, Human Resources

Lenora H. Thompson, Psychologist, Counseling Services

Barbara A. Winstead, Chair, Psychology

Michael T. Zugelder, Associate Professor, Finance

Old Dominion University

Discrimination Complaint Procedure

I. Purpose and Scope of the Procedure

A. Purpose

The purpose of the Discrimination Complaint Procedure ("the Procedure") is to promote equal employment, equal educational, and social opportunities for Old Dominion University employees and students by providing a means for the internal resolution of complaints of discrimination on the basis of gender, race, color, religion, national origin, age, disability, veteran status, sexual
B. Use of the Procedure
The Procedure may be used by any full- or part-time employee or student of Old Dominion University, who believes that he or she has a discrimination complaint as defined in the Procedures except as follows:
1. A student disciplinary action which must be appealed as described in the University's Student Disciplinary Policies and Procedures; and
2. The imposition of a faculty sanction, the termination of a faculty member for financial reasons, and a decision concerning the award of tenure to a faculty member, all of which may be reviewed only as described in the specifically applicable faculty personnel policies and procedures contained in the University's Faculty Handbook.

C. Use of Administrative Review Procedures
An employee or student must complete any existing administrative review procedures for review of an action about which the employee or student wishes to complain prior to filing a complaint under this procedure.

D. Use of Other Discrimination Complaint or Grievance Procedures
This Procedure is not to be used in addition to other internal discrimination complaint or grievance procedures which may be available to the employee or student who has a discrimination complaint. For example:
1) an employee covered under the Virginia Personnel Act who chooses to complain about an action through the grievance procedure described in the Virginia Personnel Act must raise a complaint of discrimination in his or her grievance; 2) a faculty member who chooses to complain about an action through the grievance procedure provided in the Faculty Handbook must raise a complaint of discrimination in his or her grievance; or 3) a student who chooses to complain about an action through any existing student grievance procedure must raise a complaint of discrimination in his or her grievance.

E. Use of External Discrimination Complaint Procedures
This Procedure affords a means for the internal resolution of discrimination complaints, and is not intended to be used in conjunction with external (i.e. State or Federal) discrimination complaint procedures. Therefore, this Procedure is not available to an employee or student who has filed a complaint with the Commonwealth of Virginia Department of Human Resource Management or with the U.S. Equal Employment Opportunity Commission. Any complaint pending under this Procedure will be dismissed upon notice to the University that a federal or state complaint has been filed.

II. Definitions
For the purposes of the Procedure, the following terms have the meanings ascribed to them as follows:
A. Discrimination Complaint: A discrimination complaint is a written statement by an individual that he or she has suffered direct injury as a result of an action by a University official or employee which is intended on the basis of gender, race, color, religion, national origin, age, disability, veteran status, sexual orientation, or political affiliation.
B. Complainant: The individual who files a discrimination complaint.
C. Respondent: The University official or employee named in the discrimination complaint as having taken the action, which is the basis for the complaint.
D. Director: The EO/AA director or the director's designated representative.

III. Administration of the Procedure
A. Responsibility for Administration
The Procedure will be administered by the director and all records resulting from a complainant's use of the Procedure will be maintained by the director. The director establishes and interprets the Procedure, assures compliance with the Procedure as it relates to employees and students, and is responsible for providing information to employees and students concerning the availability and operation of the Procedure.
B. Time Periods
1. With the exception of the time period described in paragraph V (B), designated vacation days of the University and days between the end of one University semester or summer session and the beginning of the next semester or summer shall not be included in the time periods described herein.
2. If, under the Procedure, a time period begins upon a party's receipt of notice, the time period will commence upon actual receipt of notice by the party or three (3) days after the notice was sent by certified mail to the last address shown on University records for that party.

IV. Informal Procedure
A. Informal Discussion
The director shall encourage an employee or student who has a complaint of alleged discrimination to discuss the complaint with the individual who took the action, which is the basis for the complaint. The Director may be present during such discussions if either party requests such.
B. Informal Resolution
Both parties to the complaint shall attempt to effect a resolution of the complaint through informal discussions.

V. Formal Procedure
A. Discrimination Complaint
An employee or student who has a complaint of illegal discrimination may initiate formally this discrimination complaint procedure by filing a written statement with the EO/AA Office. The written statement must include the following:
1. a description of the action upon which the complaint is based;
2. the date of the action or in the case of an action which was reviewed administratively, the date of the final administrative decision below the level of the president;
3. the name of the respondent, that is, the name of the University employee who took the action or, in the case of an action which was reviewed administratively, the name of the University official who made the final administrative decision, below the level of the president, in the review process;
4. the nature of the alleged discrimination;
5. whether the complainant has informally discussed the matter with the respondent and, if so, the results of those discussions; and
6. whether the complainant has pursued the complaint through administrative review procedures, and, if so, a description of those procedures and the results.
B. Time for Filing a Complaint
The written statement must be filed within one hundred twenty (120) calendar days of the date upon which either the action described in the complaint occurred or the final decision was made after an administrative review of the action, whichever was later.
C. Response to the Complaint
If the director determines that the written statement is complete and is a timely filed discrimination complaint, the director will notify the supervisor of the respondent. The respondent may respond in writing to the discrimination complaint; however, the respondent's written response must be received by the director within ten (10) days of the respondent's receipt of notice of the complaint. In the written response, the respondent may ask for an opportunity to resolve the complaint through discussions. If the respondent should ask for an opportunity to discuss the matter, the director will take no further action on the complaint for a period of ten (10) days from the date of the director's receipt of the written response so as to provide that opportunity.
D. Procedure for Investigating a Complaint
1. If the complaint is not resolved informally, the director will provide both parties with a reasonable time to choose whether to have an investigation made by the director or by a panel.
2. If either party should choose to have an investigation made by a panel, the discrimination complaint will be investigated by a panel.
3. If neither of the parties chooses to have the complaint investigated by a panel, the director will investigate the complaint. The director's investigation will commence within five (5) days of the director's receipt of notice of the complaint made by the parties or within five (5) days of the end of the period for making such an election, whichever is earlier. During the investigation, the director will, at a minimum:
5. The panel's investigation will commence within ten days of the panel's selection. The investigation will proceed as follows:

a. The panel will hear a presentation by the complainant, during which the complainant will present his or her claim, pertinent witnesses and relevant documents.

b. The panel will then hear a presentation by the respondent during which the respondent will present his or her response to the complaint, pertinent witnesses and relevant documents.

c. A party may be present during the other party's presentation but witnesses will be present only while making statements to the panel.

d. The panel members may question the parties and witnesses but must do so in a fair and objective manner.

e. The panel members may request documents other than those presented by the parties and may interview pertinent witnesses other than those presented by the parties.

f. The chair will set the date(s), time(s) and place(s) of the panel's meeting(s) and will conduct the meeting(s). The chair may limit repetitive or irrelevant statements by the parties or by witnesses. The chair shall limit questioning by a panel member if that questioning becomes abusive, unfair, or repetitive. The chair may dismiss from a meeting any person, including a party, who becomes abusive or who obstructs or interferes with the meeting.

g. The meeting(s) will be closed. Taped recording(s) of the meeting(s) will be made.

h. Upon the conclusion of its investigation, the panel will meet to determine its finding and make its recommendation as described in paragraph 6 below. The panel's finding and recommendations shall be determined by majority vote of the panel members.

6. Findings and recommendations of the director or panel shall be made as follows:

a. Where the director or panel finds that there is not probable cause to believe that discrimination has occurred, the director or panel shall recommend that the complaint be dismissed.

b. Where the director or panel finds that there is probable cause to believe that discrimination has occurred, the director or panel shall recommend a remedy, which the University's president has the authority to provide. The findings and recommendation of the director or the panel will be forwarded to the University's president. The director, as chair of the panel, will communicate the decision of the panel to the president. Copies of the findings and recommendations will be sent to the complainant and the respondent. The taped record of the investigation and documents received during the investigation will be provided to the president with the director's or panel's decision.

E. Decision by the President

1. The president will make a final decision in the matter based upon the president's review of the findings and recommendations of the director or panel. The president will notify the complainant and respondent of the president's decision in writing within twenty-one (21) days of the president's receipt of the findings and recommendations. If the president disagrees with the panel's or director's findings and recommendations, the statement of decision will include a statement of reasons for the decision. If the president decides to provide a remedy to the complainant, the statement will include a description of the remedy to be provided. The president's decision is final.

2. When a remedy is provided by the president, the director will monitor implementation of that remedy.

VI. Assurance of Confidentiality and Retention of Records

A. The complaint and all records developed during the investigation of the complaint shall be considered confidential and shall not be released except as required by law or by the provisions of this Procedure.

B. The complaint and all records developed during the investigation of the complaint shall be retained for a period of two (2) years after the date of the president's decision. Thereafter the records shall be destroyed unless state or federal action is pending.

VII. Further Review of the Complaint

After the president makes a decision, there is no further University review of the complaint. A dissatisfied complainant may file a complaint of discrimination with the Commonwealth of Virginia Department of Human Resource Management, the U.S. Equal Employment Opportunity Commission, or the U.S. Department of Education, Office for Civil Rights.

Accommodation of Students with Disabilities: Policy and Procedures

Old Dominion University is committed to achieving equal educational opportunity and full participation for persons with disabilities. It is the University's policy that no qualified person be excluded from participation in any University program or activity, or otherwise be subjected to discrimination with regard to any University program or activity. This policy derives from the University's commitment to non-discrimination for all persons in employment, access to facilities, student programs, activities and services. Disability Services shall oversee the assessment of student requests for accommodation and assistance and shall coordinate the development of the program among the student, faculty members, and department chairs. In addition, the office shall implement the University's disability program for students and supervise the delivery of equipment and services.

The director of equal opportunity and affirmative action is the Section 504 Coordinator who will monitor the implementation of these guidelines.

The provisions of services to students with documented disabilities at Old Dominion University are based on the principle of non-discrimination and accommodation in accordance with the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. These services will be provided within the basic guidelines to follow, with the understanding that students with disabilities may require unique accommodations and must have their needs assessed on a case-by-case basis. The provision of accommodations for students with documented disabilities need not guarantee them equal results or achievement; accommodations must only afford them an equal opportunity for achievement. Old Dominion University is committed to providing students with documented disabilities the same opportunity to achieve academic success as it provides for all students.

I. Definition of Those Qualified for Assistance
The appropriate recipient of accommodations is defined as one who has a physical or mental impairment, which substantially limits one or more major life activities, such as walking, seeing, hearing, speaking, performing manual tasks or learning. In addition, a person who has a history of such an impairment is qualified for assistance. With respect specifically to the post-secondary setting, such a person must be otherwise qualified under the academic standards requisite for admission in spite of the disability.

II. Recruitment

The Office of Admissions at Old Dominion University will make all reasonable effort to assure that all recruitment activities are made accessible to persons with documented disabilities. All schools hosting Old Dominion University recruitment activities will be encouraged to provide that such facilities are accessible so that interested persons with disabilities will not be excluded or denied participation. In keeping with this policy, Old Dominion University will provide, if given adequate advance notice, such services as interpreters, audio tapes or reader services at recruitment functions.

III. Admission to the University

A. General Admissions

The requirements for general admission for persons with disabilities are no different from those for other persons applying to Old Dominion University. The official application for general admission to the University will not ask for information concerning an applicant’s physical or mental disability. However, there are programs within the University which have technical standards that must be met. A prospective student may choose to self-disclose in the admissions process.

B. Acceptance to Specific Programs

Each academic program has established technical standards that describe the skills the student must have or be able to acquire in order to meet curriculum requirements and to perform successfully in an academic program. The University is not required to make major academic adjustments, fundamental changes, or substantially modify standards for acceptance into or completion of any academic program. Students with disabilities interested in applying for acceptance to a particular program should assure that they are aware of any applicable technical standards.

When a question arises about the qualifications of a student with a disability who wishes to be accepted in a particular degree program, the department chair should have the responsibility of deciding whether or not the applicant will be accepted to the program. After having considered the requests for accommodation presented by the student, as well as the technical standards for the requested program, the department chair shall determine whether or not the student is otherwise qualified for acceptance to the program.

In making the determination, the department chair should consult with the student’s advisor and Disability Services. If after careful consideration, the department chair decides that the student is not otherwise qualified for acceptance to the program of study, the student will be advised of his or her academic options. The decision of the department chair may be appealed to the dean. The dean shall consult with the director of equal opportunity/affirmative action prior to deciding the appeal. The decision of the dean is final.

IV. Determination of Need for Reasonable Accommodations/Academic Adjustments

Under Section 504, institutions are required to respond by making modifications in academic requirements as necessary to ensure that such requirements do not discriminate or have the effect of discriminating against a student with a disability.

The information sent to students upon acceptance to the University shall include a notice that it is the responsibility of students with a disability to contact Disability Services to arrange for accommodations. The information provided by the student in doing so will be kept confidential and shared only with those involved in arranging for accommodations.

Students who request reasonable accommodations must be prepared to provide documentation of the disability by a qualified professional, where appropriate, before accommodations will be implemented. Except under extraordinary circumstances, the documentation must be current, i.e., dated no more than three years prior to enrollment in the University.

Documentation must provide sufficient information to assist the institution in determining what difficulties the student would encounter in a normal learning environment. Although formats will vary, the following critical data should be included in any documentation in support of a request for accommodations:

1. The student’s name, the dates of examination or testing, the examiner’s name and credentials.
2. Identification of the problems or reasons for referral.
3. In cases of learning disability, a list of the tests administered, including the names of the tests, as well as the version used.
4. An analysis or interpretation of test results.
5. Diagnostic summary with a brief composite of the entire assessment process. The summary should address the concerns raised in the section on reasons for referral.
6. Recommendations of strategies to assist the student in becoming an efficient learner.

A student with a documented disability who has registered for class or has been accepted into the University can request support services and the use of assistive technology for classroom and extra-curricular activities. The student must notify Disability Services of the accommodations required within a reasonable time prior to the date of anticipated need. Reasonable accommodations by the University are possible only after contact with Disability Services has been initiated. Students needing sign language interpreters or special equipment should provide 45 days notice to Disability Services.

Requests for accommodation shall be assessed by the Office of Disability Services after carefully reviewing the diagnostic evaluation and the student’s previous scholastic performance. Each will be reviewed on its own merits and verified by objective documentation about the effect of the specific documented disability on the ability to learn in the content area in question.

Students are encouraged to self-identify their documented disability to their professors at the beginning of each semester to avoid delays in receiving accommodations. If students are newly documented during the course of a semester, accommodations will be implemented within a reasonable time period, usually two weeks following presentation of the documentation.

In order to receive accommodations, students must supply their instructors with letters from Disability Services, which verify their disability and identify reasonable accommodations. The student and faculty member shall:

1. discuss the implementation of appropriate accommodations;
2. note their respective agreement to these accommodations; and
3. return the signed forms to Disability Services noting their agreement in the space provided.

Students who have a documented disability may elect not to disclose the disability. Should the student seek accommodations late in the semester, or if a student has a disability which is not obvious and chooses not to disclose it, then he/she should be aware that 1) all previous grades will stand as earned, and 2) accommodations will be implemented in a timely manner, usually within two weeks.

For students who are newly identified and documented during the course of a semester and thus, have not had the advantage of accommodations, considerations will be made on a case-by-case basis in consultation with all parties involved.

The types of accommodations provided to students with documented disabilities will vary depending on the nature of the disability and the course content. Often an initial trial-and-error period may be needed to determine the best way to accommodate a student’s disability.

Disability Services will confer with students and determine appropriate accommodations. Students are notified of the results of the assessment. This notification to the student from the University shall serve as a guide for the provision of services from the University for the semester or situation specified.

If agreed-upon accommodations did not meet the needs of the student, the student should contact Disability Services for further assistance.

If accommodations are not agreed upon or are not implemented, the student should contact Disability Services. Disability Services will determine the reasonableness of the accommodation(s) requested. If Disability Services determines that the request is reasonable, it will consult with the appropriate chair and, if necessary the dean, to reach agreement on the accommodations to be provided.

If Disability Services does not agree with the student’s request, then the student may follow the procedures outlined in Section VI of this policy.
V. Support Services

A. Advising
Students with documented disabilities should make sure that their advisors are aware of the disabilities so that the advisor can guide the student as to course or degree requirements which may affect the student's completion of the course or degree program.

B. Classroom Accommodations
The University shall provide the following minimal accommodations for students with documented disabilities in the classroom: 1) classroom activities, including testing procedures and other methods of evaluation used for classroom participation, shall be reasonably modified to provide students with documented disabilities with the opportunity to participate; 2) the location of classrooms shall be changed as appropriate to accommodate the student with a disability; 3) a reasonable number of elective courses shall be held in accessible facilities; 4) the use of special equipment and assistive technology; and 5) modification of course requirements or assignments which may not be essential shall be considered.

C. Student Services and Activities
Students with documented disabilities at Old Dominion University shall be provided reasonable accommodation for participation in and use of student services and activities including housing, health insurance, counseling, financial aid, physical education, athletics, recreation, transportation, or other extracurricular programs or activities.

Given adequate notification, those students who require assistive technology and assistance for counseling settings will be provided with the aids and assistance necessary to participate.

At athletic and extracurricular activities, such as concerts and stage entertainment, special seating will be provided for students using wheelchairs as audience participants. For Old Dominion University sponsored lectures, cultural activities, convocations and commencements, the participation of students with documented disabilities shall be provided, upon request, through the aid of sign interpreters, assistive technology or other reasonable accommodation. Arrangements shall be made by Disability Services if sufficient notification is given.

D. Housing
Old Dominion University provides on-campus housing space, which has been specifically reserved for occupancy by students with documented disabilities and is moderately barrier free. The University will provide and assign students with disabilities to housing, as such space is available in resident hall and apartment settings. Roommates will be assigned to students with disabilities occupying modified rooms in the same manner as other resident students.

It is the responsibility of the student to identify him/herself as a student with a documented disability seeking University housing in order to be considered for a reserved space. Application for a reserved space for a student with a disability should be made to Disability Services.

Housing Services will assign that space based on information provided by Disability Services. Priority will be based on the greatest physical need to live in University housing as a means of providing a student with a disability opportunity to successfully fulfill their academic program at the University. Final selection for reserved spaces for students with disabilities will be completed at a specified date in mid-summer of each year. The student will be informed of the room assignment by Housing Services. The remaining spaces reserved for students with disabilities will be turned over to the Housing Services staff for assignment to students on the waiting list. Any student with a documented disability has the alternative of entering the regular housing application procedures and is not required to take a reserved space. However, students who have special needs should make sure the regular housing space could accommodate their needs.

Rental rates for students with documented disabilities shall be set at the same rate as for any other student at Old Dominion University. The exception to this is the single room policy, which provides for a limited number of single room accommodations available for qualified students with documented disabilities at the rate which would normally be charged for double occupancy. The request for single accommodations must be made to Disability Services and be properly documented. A final determination is made by Disability Services and final placement is made by Housing Services. Returning students may request that they be assigned to the same space as in the previous year. Students should proceed through the regular housing process to request the same space.

VI. Complaint Resolution Process
If a student with a documented disability believes that he/she has not been provided with the services to which he/she is entitled, the student should direct his/her complaint to the Office of Equal Opportunity and Affirmative Action.

The student shall provide to the director of EO/AA, in writing, documentation of the disability, the nature of the discrimination, and any other information deemed important.

The director will then attempt to reach an agreement through an informal mediation process. If an agreement is reached, a copy of the agreement shall be provided to the student and the faculty member. If an agreement cannot be reached, the director will convene an ADA Evaluation Committee for the purpose of evaluating the case and making a recommendation to the provost. The decision of the provost is final.

The members of the ADA Evaluation Committee will be the director of equal opportunity/affirmative action (chair), the general counsel, the director of disability services, the appropriate dean and a designated representative from Academic Affairs.
Admission to Old Dominion University

Office of Admission

The mission of the Office of Admissions is to recruit, admit and enroll students from throughout the United States and abroad who will contribute to the overall collegiate experience. Old Dominion University's admission is open to all qualified students regardless of race, sex, age, national origin, veteran status, disability, political affiliation or sexual orientation.

I. Undergraduate Admission

Freshman Admission

Freshman applicants are students who are currently enrolled in high school or who graduated from high school within the past two years and have not attended any regionally accredited college or university (not to include dual enrollment).

Admission to the University does not imply admission to specific degree programs unless it is stated explicitly in the letter of admission. Students should refer to the application for admission to review information regarding additional departmental application requirements.

Requirements

The admission committee takes the following factors into consideration during the application review.

Academic Involvement

The University encourages students to participate in a challenging program of study. Preference is given to students enrolled in Advanced Placement (AP), college level dual-enrollment, honors and/or International Baccalaureate (IB) courses. The most qualified applicants' high school curriculum includes the following courses:

- English 4 units
- Social Sciences 3 units (World History, United States History, and United States Government)
- Mathematics 3 units (Algebra, Geometry, Algebra II)
- Sciences 3 units
- Foreign Language 3 years of one foreign language or two years of two foreign languages

Academic Achievement

The admissions committee considers the cumulative high school grade point average and class rank as well as the performance on the Scholastic Assessment Test I (SAT) or the American College Testing (ACT) Program. Applicants should consult their high school guidance counselor for test registration procedures.

Additional Credentials

The admission committee reviews each student's resume, essay, and letters of recommendation. These additional credentials combined with the academic qualifications, provide the committee a comprehensive profile of an applicant's potential for academic success and his or her ability to contribute to the academic community. Students with unique talents and abilities in art, music, leadership, and other endeavors should include this information in their admissions package.

Non-Traditional Freshmen

Students who have not graduated from an accredited high school will be considered for admission provided they take the High School Equivalency Test administered by the State Board of Education or the General Education Development Certificate (GED). Students who graduated from high school more than two years ago and have not enrolled at any regionally accredited college or university are required to submit an official high school transcript. The admission committee strongly encourages the submission of a resume and statement of goals.

High school student students with exceptional academic abilities may take classes before completing the full program of high school studies. Students must submit scores from either the SAT I or the ACT and their high school transcript. Additionally, a letter must be submitted from the high school principal supporting the student's early admission.

Freshman Early Action Admission

Freshman applicants who submit the application, application fee and all credentials by the early action deadline of December 15 will be notified of their admission during the second week of January. Early action decisions are non-binding. Students who apply by the early action deadline are reviewed for scholarship eligibility and are invited to attend the annual Scholarship Competition Day that is held in early spring.

Freshman Regular Admission

Freshman applicants must submit the application, application fee and all credentials by March 15. All applicants who have completed the application process will receive notification on a rolling basis.

The Honors College

The Honors College was established to further the University's commitment to excellence in education. With an emphasis on teaching, innovation, and small classes, the college offers the experience of a small liberal arts college within the framework of the large university. Honor students are free to pursue any major. The four-year experience offers specially designed, low-enrollment courses to honors students and selected juniors and seniors. Many courses fulfill the General Education requirements of the University.

Courses are proposed and developed by faculty who are selected on a competitive basis to teach in the college and to interact closely with the students. Several out-of-class and off-campus experiences are often part of these courses – at no extra cost to students. A one-credit honors tutorial is required in the junior year, and a senior honors colloquium is taken in the final year of study. All Honors College students are awarded an annual honors stipend. To be considered for selection to the Honors College, students should apply for freshman admission to the University as early as possible. Currently enrolled and transfer students with freshman or sophomore standing should contact the Dean of the Honors College. The Honors College is located in Room 218 of the Education Building, (757) 683-4865.

Freshman Guaranteed Entry and Accelerated Bachelor’s/Master’s Programs

High ability freshmen may be guaranteed entry into professional and graduate school in a number of areas.

In the College of Health Sciences, physical therapy, nursing, and dental hygiene programs offer this option for freshmen. Accelerated bachelor’s/master’s programs are also available in health sciences/community health, dental hygiene and nursing.

The B.S./M.D. (guaranteed space in medical school) is available through the College of Sciences. The B.S./M.D. program allows students to begin professional school after three years.

A Bachelor’s in engineering/M.D. program is available for students pursuing undergraduate engineering degrees. The College of Engineering and Technology also offers accelerated bachelor’s/master’s and bachelor’s/Ph.D. programs.

In the Darden College of Education, freshman guaranteed entry is available in early childhood, special education, and speech pathology.

A five-year B.A. or B.S./M.B.A. allows students to combine a Bachelor of Arts or Bachelor of Science with excellent preparation for a career in the business world. These programs are available in the College of Arts and Letters, Business and Public Administration (economics) and Sciences. In addition, the following accelerated bachelor’s/master’s programs are available in the College of Arts and Letters: applied linguistics/English, communication/humanities, English, history, interdisciplinary studies/humanities, international studies, and women’s studies/humanities. In the College of Sciences, accelerated programs are available in biology, chemistry and oceanography.

Information on guaranteed entry and accelerated bachelor's/master's programs may be obtained on the University's web site or by contacting the individual programs or departments.
Transfer Admission

Transfer applicants are students who have attended another regionally accredited college or university after graduating from high school or receiving a GED.

Admission to the University does not imply admission to a specific degree program. Students should refer to the application for admission to review information regarding additional departmental application procedures.

Requirements

The admissions committee considers several factors during the application review.

Academic Involvement

The University encourages students to enroll in a challenging program of study. If fewer than 24 semester hours of academic work have been completed at a regionally accredited college or university, significant weight will be placed performance at the high school level.

Academic Achievement

The admissions committee will consider the cumulative grade point average and grade point average of the most recent 24 hours of academic courses. Performance on the Scholastic Aptitude Test (SAT) or American College Testing (ACT) Program will be considered if it has been less than two years since high school graduation and fewer than 24 semester hours of academic work have been completed at a regionally accredited college or university.

Additional Credentials

Other items taken into consideration during the review process are letters of recommendation, resume and essay. These additional credentials provide the admission committee with a comprehensive profile of an applicant’s potential for academic success and his or her ability to contribute to the academic community.

Transfer Early Action Admission

Transfer applicants who submit the application, application fee, all official transcripts and all other credentials by the early action deadline of March 15 will be notified of their admission decision by April 15. Early action decisions are non-binding. Students who apply by the early action deadline are reviewed for scholarship eligibility.

Transfer Regular Admission

Transfer applicants must submit the application, application fee, all official transcripts and all other credentials by May 1 for fall, October 1 for spring and March 15 for summer. All applicants who have completed the application process will receive notification on a rolling basis. Once a student has been admitted, an evaluation of their transfer credit will be available at www.leonline.odu.edu.

Transfer of Credit

General. Transfer of credit is allowed for course work taken at an institution of higher education that is accredited by a regional accrediting body, such as the Commission on Colleges of the Southern Association of Colleges and Schools. A grade of C (2.00) or above must be earned, and the course must be appropriate to the University’s degree program. In general, all liberal arts credits and professional and technical courses parallel to those of the University are transferable.

Graduate credit will not be accepted to meet undergraduate degree requirements.

Transfer Policies for General Education Requirements

1. Students wishing to transfer academic credits into Old Dominion University to satisfy the General Education Requirements must apply individual transfer courses to the academic skills, perspectives and upper-division categories as listed in this catalog. Students must submit transcripts to the Office of Admissions for evaluation. Decisions regarding the applicability of transfer courses to General Education Requirements will rest with the chair of the academic department responsible for the subject matter involved. Students should be aware that even though University General Education Requirements might be met through transfer of courses into the necessary categories, departmental and college requirements must still be met.

2. With regard to the fulfillment of General Education Requirements, students will be able to apply transfer credit on a course-by-course basis rather than hour-by-hour as long as the Office of Admissions representatives judge the intention of the course to be commensurate with content categories of the curriculum used to fulfill General Education Requirements at Old Dominion University. Questions regarding such applicability will be directed to the chair of the academic department responsible for the subject matter involved. Any such course transfer will carry the number of academic credits assigned by the institution where the credits were earned. In the case of quarter system credits, the standard conversion of quarter hours to semester hours (3:2) will be used.

3. Students who have received an A.A., A.S., or A.A. and S. from Richard Bland College or the Virginia Community College System (including the A.S. and A.A. and S. degrees in general studies, as modified by Old Dominion University*) have met all General Education requirements except those specified as major or college requirements and the upper-division requirement that is met through completion of a second degree or major, a minor, or an approved focus-area cluster. Students who have received an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System in specific articulated programs (to include 37 specified general education credits) have met all General Education requirements except those specified as major or college requirements and the upper-level requirement. College-parallel programs at other community colleges or systems consistent with the degree requirements of degrees from the Virginia Community College System are also accepted as meeting lower-division General Education requirements and are reviewed by the assistant director of admissions or the assistant vice president for student and academic support in distance learning. Students who transfer into the University from a campus of the Virginia Community College System without having completed the A.A., A.S., or A.A. and S. degree receive credit for General Education courses listed in an approved Transfer Guide, even if these courses are not full equivalents of Old Dominion University courses. Similarly, the University evaluates transcripts of all transfer students from accredited two- or four-year institutions at the time of the matriculation and assigns appropriate transfer credit for General Education courses judged as compatible with corresponding Old Dominion University General Education courses.

Substitutions for General Education Requirements can be made only by the dean of the college offering the General Education skill or perspective area.

4. Though it is recommended that students who plan to pursue traditional degree programs** at Old Dominion University take an equivalent of six semester hours in each of the natural science parallel areas, transfer students (without a university-parallel associate degree) who have earned the equivalent of six semester hours in one or more social science areas as defined in the General Education Requirements (prior to enrolling at Old Dominion University) will be considered to have completed the social science perspective of the General Education Requirements. Though it is also recommended that students enroll in a two-semester laboratory science in one field, transfer students who have earned the equivalent of eight semester hours in two different laboratory sciences as defined in the General Education Requirements (prior to enrolling at Old Dominion University) will be considered to have fulfilled eight credits of the natural science and technology General Education Requirement at Old Dominion University.

5. Students earning high school diplomas before December 31, 1985 will be exempted from the General Education foreign language requirement as part of the skills area of General Education at Old Dominion University.

6. Students who have earned a baccalaureate degree at another regionally accredited institution but who wish to acquire a second baccalaureate degree from Old Dominion University will be considered to have fulfilled University General Education Requirements for the

* Modifications are as follows: (1) the general studies degree must have been received on or after April 1993, (2) Northern Virginia Community College general studies degree holders must have MTH 151 or higher, and (3) Blue Ridge Community College general studies degree holders must have MTH 151 or higher and eight hours of science with a lab.

** Traditional and professional degrees are noted on the Synopsis of Degree Programs chart in this Catalog.
second degree. Such students will be expected to meet all college, school and departmental requirements as well as complete a minimum of 30 semester hours at Old Dominion University for a second degree. Prior to undertaking the second degree, students must have their accumulated credits evaluated and the second degree program approved in writing by the appropriate chair and dean.

Special Transfer Credit Policies. Transfer students admitted to the Department of Art must submit a portfolio for evaluation by the faculty to determine the number of art credits that will be accepted from previous study. Information on portfolio requirements may be obtained from the chair of the department. For more information, refer to the Department of Art section of this catalog.

Transfer students interested in music must have an audition to determine placement and number of credits transferable from previous study. Information on the audition may be obtained from the chair of the department. For more information refer to the Department of Music section of this catalog.

Applicability of Credit. Formal evaluation of credits is made by the Office of Admissions after admission to degree status and prior to the student’s first registration, if all official records have been received. Where specific equivalents can be identified, they are indicated in the evaluation. In other cases, only the discipline is listed along with the credit hours accepted. Students should be prepared to provide course descriptions to assist the Office of Admissions in determining equivalence with University course work. If no specific equivalent can be assigned, the student may still receive elective credit for work.

Associate degrees awarded outside the Virginia Community College System are examined individually to determine whether the degrees are university-parallel programs.

Second Baccalaureate Degree Admission

Second baccalaureate degree applicants are students who have earned a bachelor’s degree from a regionally accredited college or university and wish to pursue an additional bachelor’s degree in a different course of study. Second-degree applicants must submit the application, application fee and all official transcripts by May 1 for fall, October 1 for spring and March 15 for summer. All applicants who have completed the application process will receive notification on a rolling basis.

II. Nondegree Entry

Nondegree entry is available to students who do not wish to apply for admission to a degree program at the time but wish to enroll in course work at the institution. Some examples of non-degree students are:

- Visiting student – a student who takes course work at Old Dominion University and then transfers the course credit to the home (degree-granting) institution.
- Applying for a certificate program.
- Expanding academic background or teacher certification.
- Taking courses for personal and/or academic growth.
- Missed the application deadline, but intend to apply as degree seeking for a successive term.
- Taking prerequisites (undergraduate, second degree or graduate) for a degree-seeking program.
- Senior Scholars – High school students taking college-level courses (permission is needed from an admissions counselor).

Directions for Certificate Program Registration

Please contact the department offering the affiliate program for specific registration information and procedures.

Additional Information

- All students should seek the approval of the academic department before registering for course work as a non-degree student.
- Financial aid is not available for nondegree students, except those in approved teacher certification programs.
- Students under suspension from another college or university are not eligible to attend as nondegree.
- Academic advising is not available to nondegree students, but students are strongly encouraged to contact their academic department before registering for courses.
- Undergraduate students are advised to take no more than 24 semester hours as nondegree students.

- All students, degree and nondegree alike, must meet the continuation requirements as stated in the current University Catalog. Failure to meet these requirements will subject students to probation or suspension.

Non-Degree Entry Procedures

Applicants for nondegree status are required to complete the application form found in the Guide to Enrollment or on the University’s website. For the student’s convenience, official credentials may not be required at the time of registration; however, unofficial records or a personal interview may be requested for admission purposes. It is understood that all student information stated on the application is truthful. Deliberate falsification of application information will result in immediate withdrawal and a potential forfeiture of credits. Students should be familiar with policies and procedures for nondegree enrollment listed on the application form.

III. Continuing Student Admission

Continuing applicants are students who have previously attended Old Dominion University as a degree-seeking student and left the University, but would like to return. A student who has left the University in good academic standing is required to complete a reactivation/readmission form. If the separation from the University was greater than five years, the applicant will be required to reapply and resubmit all official transcripts and required credentials.

Students who are returning from academic suspension from the University must participate in the Academic Continuance Experience for Success (ACES) program prior to the start of classes for the returning semester. Failure to participate will result in a deferral of readmission until the next semester at which time the ACES program must be completed. More information about readmission from suspension can be found on the Internet at http://www.odu.edu/admission or by contacting the Office of Admission (also see Undergraduate Continuance Regulations and Adjusted Resident Credit information).

IV. Graduate Admission

Refer to the section of this Catalog on Academic Information for Graduate Students.

V. English Proficiency Requirements for Non-Native Speakers of English

Admission to the University is contingent upon successful completion of English language proficiency requirements. Non-native speakers of English can provide evidence of English language proficiency through a variety of options. Please note that Bridge Program students, undergraduate and graduate, must satisfy English proficiency requirements within twelve months from their enrollment in the program. Also, an application to the English Language Center and subsequent enrollment in English language courses at the Center does not imply admission to the University. English language courses are noncredit. Further information for non-native speakers of English is available from the Office of Admissions (permanent residents and naturalized citizens) and from the Office of International Admissions (all non-immigrants).

Fulfillment of any one of the following will satisfy English language proficiency requirements for admission to Old Dominion University:

Undergraduate Students

1. Submission of one of the following: a 550 TOEFL score or 213 CBT, a 480 Verbal SAT score, a GCSE or GCE "O" level pass in English language, an IELTS overall band score of 6.5, a CPE grade of A, B, C.
2. Possession of a bachelor’s or master’s degree equivalent from an accredited institution located in a country where English is the native language.
3. Successful completion of two university or college-level English courses at a regionally accredited U.S. institution. These courses must be the equivalent to the University’s English composition course and any other advanced composition or technical writing course. Successful completion is defined as obtaining a minimum grade of C (2.00) in each of these courses.
4. Successful completion of two semesters in Old Dominion University’s Undergraduate Bridge Program. Successful completion is defined as satisfying the following two criteria:

ADMISSIONS 27
a. Securing a minimum grade of B and demonstrating 85% attendance in each English Language Center class for two semesters; and
b. Securing a minimum grade point average of 2.50 in academic courses taken during the Bridge Program.

Students who choose to satisfy University English proficiency requirements through the TOEFL will be placed in a comprehensive Undergraduate Bridge Program including academic course work and semi-intensive English Language Center courses. Those students with TOEFL scores below 500 or CBT scores below 173 will be enrolled in full-time intensive English Language Center courses.

Students whose native language is not English and who have satisfied English language proficiency through one of the avenues detailed above are exempt from fulfilling the foreign language requirements for general education purposes and for the College of Arts and Letters.

Transfer credit is not granted for English composition classes taken at an institution located in a non-native English speaking country. Exceptions to this policy may be made in instances in which the University has entered a formal agreement with an overseas institution.

All undergraduate students take a University writing exam (called the Writing Sample Placement Test) to determine proficiency in writing. An Exit Examination of Writing Proficiency is also required in order to graduate. This exam may be taken during the junior year.

Graduate Students

Graduate applicants who are non-native speakers of English must provide evidence of English language proficiency through fulfillment of one of the following:

1. Submission of a TOEFL score of 550 or CBT of 213, a GRE verbal score of 480, an IELTS overall band of 6.5, a CPE grade of A, B, C.
2. Possession of a bachelor’s or master’s degree from an accredited institution located in a country where English is the native language.
3. Successful completion of the Graduate Bridge Program.

Graduate students who choose to satisfy English language proficiency requirements through the Graduate Bridge Program will be placed according to the following criteria:

1. Students with TOEFL scores below 500 or CBT scores below 173 will be placed in a full-time English language program.
2. Students with TOEFL scores below 550 but above 500 or CBT scores below 213 but above 173 will be placed in a comprehensive Graduate Bridge Program including academic course work (one graduate course) and semi-intensive English language courses (seven hours).

Students will be considered as having satisfied English language requirements when they have successfully completed two semesters in this program. Attendance in the seven-week Summer Graduate Bridge Program can count as one semester. Successful completion is defined as a minimum grade of B in each graduate academic course and in English language courses. No student will receive a grade of A or B in English language courses without demonstrating 85% attendance.

Also, non-native speakers of English who anticipate holding a teaching assistantship position must provide evidence of oral English proficiency. They may take the Test of Spoken English (TSE), given by the Educational Testing Service (ETS) at sites around the world, or the ETS SPEAK Test, administered by the English Language Center at Old Dominion University. Graduate teaching assistants who fail to pass either of these tests will not be eligible to assume an instructional position.

VI. International Student Admission

All international applicants seeking or holding non-immigrant visas should request an Application for International Undergraduate Students or Application for International Graduate Students from the Office of International Admissions. Official academic records and evidence of English language proficiency (if the applicant’s native language is not English) must be submitted. All students seeking or holding F1 (student) or J1 (exchange scholar) visas must submit official verification of financial resources sufficient to cover educational expenses as well.

Photocopies, notarized copies, or faxed copies of required official documents will not be accepted. Certified translations by a licensed or professional translator must accompany academic documents not written in English. Translations of official documents completed by the student will not be accepted.

Additional information required by graduate departments is specified in the International Graduate Application. All applicants, undergraduate and graduate, should read the application prior to applying to insure they understand the admissions process. Following the application instructions will insure a prompt admission decision.

Applicants outside the United States are recommended to apply to Old Dominion University six to eight months prior to their desired date of enrollment to allow time for the exchange of correspondence, evaluation of all necessary documents, and the settling of financial, immigration, and housing matters. Application and credential deadlines are as follows:

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<th>Term of Entry</th>
<th>Application/Credentials Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Priority (August)</td>
<td>February 15</td>
</tr>
<tr>
<td>Fall Late (August)</td>
<td>April 15</td>
</tr>
<tr>
<td>Spring (January)</td>
<td>October 1</td>
</tr>
<tr>
<td>Summer (May)</td>
<td>February 1</td>
</tr>
</tbody>
</table>

All international students are required to attend International Orientation which precedes Fall and Spring registration. The Office of International Student and Scholar Services organizes this program and issues certificates of eligibility for student (F1) and exchange scholar (J1) visas. Old Dominion University issues J1 documentation exclusively for students and scholars who are participating in official international exchanges (i.e., university exchanges, home or U.S. government sponsored or transfer from other institutions in J1 status).

All admissions correspondence such as applications, academic records, financial documents, examination results, translations, and course descriptions are to be addressed to:

The Office of International Admissions
Old Dominion University
220 Rollins Hall
Norfolk, Virginia, USA 23529

Tel: (757) 683-3701
Fax: (757) 683-5196
E-mail: intladm@odu.edu
website: www.odu.edu/intladm

The international undergraduate and graduate applications are available at the website noted above.

Transfer Credit

The determination of the appropriate amount of transfer credit to be awarded for work completed at a foreign institution is based on information concerning the grading scale, credits assigned per class (or number of hours per week spent in class) and the duration in weeks per class. It is the responsibility of the student to provide this information to the University. Descriptions of courses must be provided in English.

Please note that the Office of International Admissions will attempt to have a complete and accurate transfer evaluation prior to the student’s enrollment. In some cases, however, the final transfer credit evaluation and determination of course equivalency at Old Dominion may take additional time.

Deferred

International students may defer their application for admission for 12 months (beyond original term of entry). The Office of International Admissions must be notified in writing prior to registration of the original term of entry. A deferral may result in requiring updated academic, English proficiency, or financial documents. Students who will need a new IAP-66 or I-20 Form for the new term must return the previously issued form with the written request for deferral.

Please visit the Office of International Admissions web site to submit the on-line deferral form at www.odu.edu/intladm.

* These deadlines are subject to change. Please consult the most recent application for up-to-date information.
Tuition, Fees, and Financial Information

The tuition and fees outlined below have been approved for 2004-2005. Tuition and fees are always subject to change, and while the University is unable to notify each student individually of changes to fees, this information is widely publicized in the media on campus, locally, and statewide.

Tuition

As used by the University, the term tuition refers to a comprehensive fee which includes payment of instructional programs, academic services, student services and activities, recreational sports, and intercollegiate athletics. All fees are subject to approval and/or change by the Board of Visitors.

The comprehensive fee includes a student activity fee of $61.53 per credit hour for the Norfolk campus courses and $35.60 per credit hour for Higher Education Centers, TELETECHNET and off-campus courses to support student services programs, recreational sports, and intercollegiate athletics. A technology fee ranging from $1.34 to $3.76 per credit hour, and a capital fee of $1.67 per credit hour for out-of-state students.

Information related to the comprehensive tuition is published in the University Registration Information and Schedule of Classes booklet for each semester.

Comprehensive Tuition Per Semester—2004-05 Academic Year*

<table>
<thead>
<tr>
<th></th>
<th>Virginia Resident</th>
<th>Non-Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>$170.00</td>
<td>$484.00</td>
</tr>
<tr>
<td>Graduate**</td>
<td>$246.00</td>
<td>$631.00</td>
</tr>
<tr>
<td>Teaching Assistant</td>
<td>$246.00</td>
<td>$246.00</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>$246.00</td>
<td>$246.00</td>
</tr>
<tr>
<td>Clinical Psychology Joint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psy. D. Program</td>
<td>$3,180.00</td>
<td>$8,268.00</td>
</tr>
<tr>
<td>Health Service Fee—per semester (12 or more semester hours) and graduate students (9 or more semester hours)**—mandatory</td>
<td>$50.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>Part-time undergraduate (11 hours or fewer) and graduate student (8 hours or fewer)** and students taking all courses off campus—optional</td>
<td>$50.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>Summer sessions, undergraduate and graduate students—optional</td>
<td>$40.00</td>
<td>$40.00</td>
</tr>
<tr>
<td>Transportation Fee—per semester (Mandatory for all students, fall and spring, taking on-campus courses)</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>General Service Fee—per semester (Mandatory for all students)</td>
<td>$9.00</td>
<td>$9.00</td>
</tr>
<tr>
<td>Physical Therapy Surcharge—per year (Annual fee charged to all Physical Therapy majors)</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
</tr>
</tbody>
</table>

Higher Education Centers (including Northern Virginia Higher Education Center) and Off-Campus Offerings within Hampton Roads:

<table>
<thead>
<tr>
<th></th>
<th>Virginia Resident</th>
<th>Non-Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>$170.00</td>
<td>$484.00</td>
</tr>
<tr>
<td>Graduate</td>
<td>$246.00</td>
<td>$631.00</td>
</tr>
<tr>
<td>TELETECHNET and Off-Campus (Outside Hampton Roads): Undergraduate</td>
<td>$184.00</td>
<td>$184.00</td>
</tr>
<tr>
<td>Graduate</td>
<td>$284.00</td>
<td>$284.00</td>
</tr>
<tr>
<td>TELETECHNET USA (Outside Virginia): Undergraduate</td>
<td>$184.00</td>
<td>$184.00</td>
</tr>
<tr>
<td>Graduate</td>
<td>$284.00</td>
<td>$284.00</td>
</tr>
</tbody>
</table>

Students who are eligible to enroll in a combination of undergraduate and graduate courses in any given semester must pay tuition for the courses at the appropriate levels as prescribed. Graduate hours are available at graduate tuition rates, and undergraduate rates apply for undergraduate hours.

Housing Charges—2004-05 Academic Year*

<table>
<thead>
<tr>
<th></th>
<th>Monarch House (room only per year)</th>
<th>$4,602.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Powhatan I and II (room only per year)</td>
<td>$3,596.00</td>
</tr>
<tr>
<td></td>
<td>Whitehurst, Rogers and Gresham (room and board per year)</td>
<td>$5,802.00</td>
</tr>
</tbody>
</table>

Applied Music Fees—2004-05 Academic Year*

<table>
<thead>
<tr>
<th></th>
<th>Individual Instruction (2 or 3 credits, one-half hour of instruction)</th>
<th>$250.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individual Instruction (1 credit, one-half hour of instruction)</td>
<td>$175.00</td>
</tr>
</tbody>
</table>

Laboratory Fees—2004-05 Academic Year*

<table>
<thead>
<tr>
<th></th>
<th>CHEM 322, 442W, 542, 444, 544</th>
<th>$50.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHEM 101N, 102N, 115N, 116N, 126N, 127N</td>
<td>$40.00</td>
</tr>
<tr>
<td></td>
<td>ENGN 110, 111</td>
<td>$35.00</td>
</tr>
<tr>
<td></td>
<td>GEOG 402, 404, 502, 504</td>
<td>$25.00</td>
</tr>
<tr>
<td></td>
<td>GEO 10N, 111N, 112N</td>
<td>$30.00</td>
</tr>
<tr>
<td></td>
<td>GEOL 106N, 107N</td>
<td>$20.00</td>
</tr>
<tr>
<td></td>
<td>OCS 106N, 107N</td>
<td>$20.00</td>
</tr>
<tr>
<td></td>
<td>OTS 110, 222, 231, 241, 250, 360</td>
<td>$20.00</td>
</tr>
<tr>
<td></td>
<td>PHYS 103N, 107N</td>
<td>$20.00</td>
</tr>
<tr>
<td></td>
<td>THEA/COMM 370, 380</td>
<td>$25.00</td>
</tr>
</tbody>
</table>

Nonrecurring Charges and Fees—2004-05 Academic Year*

|                  | FINANCIAL INFORMATION 29                                               |         |

Application Fee*** | $40.00 |
Late Penalty Fee | 10% of past due amount |
Payment Plan Processing Fee (nonrefundable) | $40.00 |
Returned Check Processing Charge | $20.00 |
Collection Fees | 33% |
Transcript Processing Charge (per copy) | $5.00 |
Thesis, Dissertation Binding Service Charge | $40.00 |
Additional Copies | $16.50 |
Ph.D., Dissertation Microfilming | $55.00 |
Copyrighting | $45.00 |

** Graduate students who are employed as graduate assistants and receiving financial support to pursue graduate degrees at Old Dominion University may receive partial to full tuition assistance. In order to be eligible to receive full tuition assistance, graduate students must be enrolled in and complete at least six hours of graduate course work each semester and three in the summer. To continue receiving tuition assistance, graduate students must be supported for at least one half of the semester and receive at least $2,500 in support per regular semester or $1,334 during the summer. A doctoral student who has successfully passed the Candidacy Examination and needs only to complete the dissertation must be registered for at least one hour of dissertation (689) to be eligible for full tuition assistance.

*** Graduate students who are fully supported on assistantships are required to meet different definitions for full-time status. Refer to the section of this Catalog on Normal Course Load for Graduate Students for more complete definitions.

**** Does not apply to Old Dominion University full-time faculty and staff and their full-time dependents and former Old Dominion University students seeking readmission who have not attended another institution since leaving Old Dominion.
State Residency
To be considered a Virginia resident for tuition purposes for any given semester, it is necessary that the applicant be domiciled in the Commonwealth of Virginia for at least one year immediately preceding the beginning of that term. Domicile is a technical legal concept and is defined as the place (state) where a person resides with the unqualified intention of remaining indefinitely, with no present intention of leaving. Domicile is generally evidenced by such things as payment of income, real estate, and personal property taxes, voter and automobile registration, and driver's license. Residence in Virginia for the purpose of securing an education does not qualify a person for classification as a Virginia student for tuition purposes.

A student who meets the criteria for resident tuition during his or her course of study at Old Dominion University is not automatically reclassified to such status. He or she must request such classification, using an appeal form available from the Office of the University Registrar. By law, appeals of classifications must be submitted before the start of classes for the term in which a change is sought. Copies of the Virginia statute and guidelines issued by the State Council of Higher Education for Virginia are on reserve in the University Library. Because of the length of those requirements, they are not printed in this catalog. Additional information may be obtained from the Office of the University Registrar.

Students who fail to complete the Tuition Rate Determination Form are classified at the out-of-state tuition rate.

Billing Cycle
Through the act of registration, either by registering online, by telephone, or by registration form, students accept responsibility for charges incurred. All University charges are due and payable by the established deadlines. The total amount due must be received by 5:00 p.m. on the deadline date shown on the statement to avoid financial penalties. Students unable to pay the total due may opt for participation in the University payment plan. If charges remain unpaid 30 days after the due date, a 10% late payment penalty is assessed.

Billing Statements
It is the University's intent to begin electronic notification. Please refer to Leo Online for specific types of notification covered. Approximately 30 days before the payment due date, advance billing statements for tuition and fees are mailed (either via U.S. Postal Service or electronically) at the University's discretion to students who have preregistered. Students are expected to access account information through the secured access site on the World Wide Web at www.leonline.odu.edu. Any student who registers or adds classes after any advance billing may be issued a statement via U.S. Postal Service or electronic mail during the next billing cycle, and charges will be subject to late payment charges. Failure to receive a reminder bill confirming charges does not waive the requirement to make payment when due, and financial penalties may accrue. Statements sent via the U.S. Postal Service will be sent to the permanent address on file with the Registrar's Office. It is the student's responsibility to maintain correct addresses on Leo Online or with the Registrar's Office.

Failure to Pay Tuition
Students' registrations will not be canceled for failure to pay tuition. Non-payment will not release students from the financial obligation for tuition charges. Students are strongly encouraged to follow University procedures and meet published deadlines to officially drop classes and be released from charges. Stopping payment on a tuition draft does not constitute a cancellation of the student's registration.

Payment/Cashiers Office
Students may pay for classes with personal checks, money orders, cash, or charge cards (VISA or MasterCard only). Cash payments should be made at the Cashiers Office ONLY. Payments may be mailed to Accounts Receivable/Cashiering, Old Dominion University, Alfred B. Rollins, Jr. Hall, Norfolk, VA 23529-0045. Personal checks will be accepted for the exact amount of fees and/or other amounts owed the University. Third-party payments are accepted upon submission of authorization documents. Payments on all financial obligations to the University will be applied on the basis of age of the debt. The oldest debt will be paid first. Postdated checks are not scrutinized and will be deposited upon receipt. The Cashiers Office does not cash checks or make cash refunds. Checks must be provided in US dollars. Checks written in excess of assessed fees or other amounts paid the University will be accepted and processed, but the excess will be refunded to the student by mail at a later date.

Third-Party Payment Authorizations
The financial guarantee for payment of tuition and fees must be addressed specifically to Old Dominion University, Accounts Receivable, and printed on agency letterhead, purchase order, or voucher. Payments must be unconditionally guaranteed and made by the due date specified on the University’s invoice. Amendments to the financial guarantee are required in writing. Prior to the University processing authorizations, students may receive an individual billing statement. Students must provide the third-party billing authorization or government training voucher to the Office of Finance before the student’s individual payment due date. Failure to submit the authorization by the established deadline may result in a student billing, assessment of late fees and a financial hold on the student's account. An agency with a past due balance may have billing privileges terminated. Sponsoring agencies and students being sponsored by these agencies should be aware that the student is ultimately responsible for any defaults in payments by the sponsoring agency. A student whose employer or sponsor reimburses him or her for tuition after receipt of grades is not considered a third party. A student must pay in full upon registration or by the stated due date to avoid financial penalties. Contact the third-party billing coordinator for billing requirements or check the University web site.

Student Account Inquiry
The University reserves the right to request information on the student identification number and/or a photo identification when releasing information or conducting other financial transactions. Specific account information will be released only to the student. Each student account can be viewed using any Internet browser. Students are strongly encouraged to access records directly through their secure access site on www.leonline.odu.edu. Students are expected and required to assume responsibility for their own financial matters and to abide by the laws of the Commonwealth and the rules and regulations of the University. Failure to read and comply with University regulations will not exempt students from whatever penalties they may incur.

Delinquent Accounts
The University will not issue a degree, diploma, transcript of grades, grade report, or permit a registration for future terms to any student who has not paid all debts in full. Students with accounts held are permitted to drop classes to reduce debt or withdraw to prevent academic penalty.

Collections
Virginia State law requires that the University make every attempt to collect past due amounts owed to state agencies. If, after 60 days, full payment of a debt has not been received, the account will be placed with a collection agency. Account holders are responsible for any collection costs incurred at a rate of 33.33% of the total due. Other collection agencies may be included in the following: the account can be listed by the Credit Bureau as a bad debt; a delinquent account can be collected in full from income tax refunds or other refunds due from the state (for Virginia residents); and the account may be turned over to the Virginia Attorney General’s Office for litigation. Timely payment is strongly encouraged so that collection efforts can be avoided.

Set-off Debt Collection Act
The University pursues debt in accordance with the guidelines set forth by the Commonwealth of Virginia in the Virginia Debt Collection Act. Under the provisions of this act, an individual's Virginia income tax refund will be subject to the University's claim for any unpaid balance of tuition and fees. Any communication disputing an amount owed must be submitted in writing to the accounts receivable manager, Alfred B. Rollins Jr. Hall.

Dishonored Checks and Charge Cards
A $20.00 fee will be charged for each returned check or charge. If collection action is necessary, students will be liable for all collection agency costs. Stopping payment on a tuition draft does not constitute a cancellation of the student's registration.
University Payment Plan (not available on past due balances)

The University offers a payment plan during fall and spring semesters ONLY. Payment plan agreements are administered by the Office of Finance and are established for a specified four-month period each semester (refer to the Guide to Enrollment). Payment plans are established on the student's total charges for tuition and/or housing. There is a $40.00 non-refundable processing fee to establish the plan each semester. Students must be in good standing with their student account to be eligible to participate. Payment plan forms are available on the University's web site. Payments received after the 10th of the month in which they are due will incur financial penalties. Failure to pay on time may prevent students from using the payment plan process to defer payments in future terms.

Tuition Refund Policy

The total tuition is considered fully earned by the University once scheduled classes have begun in any semester or summer session. Failure to attend the course after registering is not justification for elimination of charges.

For refund purposes, the beginning date of class is defined as the first official class date for the term, usually a Saturday. The ending dates for the first and second weeks of class are defined in the course schedule booklet and University catalog. Students desiring to drop or withdraw from the University must formally notify the University using the official procedures set by the Office of the University Registrar. Refunds will be computed based on the actual withdrawal date certified by the Office of the Registrar. Refunds will not be made to students who do not attend classes and have not completed the required withdrawal procedure. Refunds are issued by check for all payments, including credit cards.

Academic Semesters

(Refer to the Guide to Enrollment for specific dates.)

<table>
<thead>
<tr>
<th>Drop/Withdrawal Period</th>
<th>Student Refund or Release from Charge</th>
<th>Amount due the University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop prior to the first day of class</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Drop during the first week of class</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Withdraw during the second week of class</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Withdraw after the second week of class</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Special Provisions for Summer Sessions

<table>
<thead>
<tr>
<th>Drop/Withdrawal Period</th>
<th>Student Refund or Release from Charge</th>
<th>Amount due the University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop prior to the first three days of the session</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Withdraw during days four, five or six of the session</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Withdraw on the seventh day of the session</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Refunds for Classes Less Than One Semester in Length

<table>
<thead>
<tr>
<th>Drop/Withdrawal Period</th>
<th>Student Refund or Release from Charge</th>
<th>Amount due the University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop prior to the first day of class</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Withdraw after the first day of class</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Tuition Differentials

In accordance with the refund periods, a full or partial refund of the difference between tuition paid and the new tuition charges will be granted if the per credit rates differ. In those instances where the revised tuition charges are greater, the additional tuition charges will be assessed.

Drop and Add

No refund or additional tuition charges are assessed for students who drop and add an equal number of credit hours on the same day within the same semester/session if the per credit tuition rates are the same.

Special Situations

Administrative withdrawals, as in the case of classes canceled by the University or the case of academically suspended students, entitle the student to a full refund of tuition.

Refund Policy on Financial Aid Funds

Federal regulations mandate the treatment of refunds for financial aid recipients. Financial aid funds are returned to the government when charges were paid by financial aid and a refund is given a student who fully withdraws from the University. Financial aid recipients may request more detailed information from the Financial Aid Office as federal refund guidelines are subject to change.

Tuition Appeal Policy

Students who must withdraw (with a grade of W or WF only) after the end of the refund period may appeal for a refund under the Tuition Appeal Policy. The purpose of the tuition appeal policy is to provide an opportunity for students to explain mitigating circumstances that prohibited them from course completion. All appeals are written and are reviewed by the Tuition Appeal Committee. The Tuition Appeal Committee may approve a refund or a release of financial aid under pre-approved conditions or recommend an exception. Committee decisions are final.

Students have the responsibility to submit an appeal no later than one year from the end of the term for which charges are being appealed and to demonstrate compliance with the policy. Documentation is required, especially in cases of illness, death, and changes in employment shifts or military orders. Depending on the complexity of the appeal, processing time on appeals can vary from two to six weeks.

Tuition appeals will generally be approved for the following reasons as long as the appropriate supporting documentation is provided: extended periods of physical illness, extended periods of physical or mental illness of the student's immediate family member, death of a student's immediate family member, mandatory job transfers outside of Hampton Roads or extended campus site, involuntary changes in employment schedule or military deployment, or a statement from the Office of the Vice President for Student Services authorizing an administrative withdrawal for medical reasons.

Students are strongly discouraged from submitting appeals that are based on lack of awareness of University policies and procedures, changes in personal circumstances or decisions, dissatisfaction with academic progress, or personal errors in judgment, including not attending class or the acceptance of new employment, as they will not be considered for approval. Issues related to the dissatisfaction with course content, delivery of instruction, or dissatisfaction with an advisor or instructor should be addressed with the chair of the academic department rather than through this appeal process.

Tuition appeal forms are available from the Office of Finance or from the University web site.

Employee Fee Waiver

Full-time faculty and staff registered for on-campus courses may have the transportation fee waived provided a faculty/staff parking decal has been purchased. Accounts are adjusted after the end of the drop/add period.

Senior Citizen Waivers

Free tuition for credit courses is available to senior citizens (persons 60 years of age or older who are residents of Virginia) who have a federal taxable income of less than $10,000; if the person's taxable income exceeds $10,000, the individual may only audit the course for free. Noncredit courses are free to all senior citizens. Senior citizens must pay other course-related fees such as applied music fees, lifetime sports fees, and other fees related to class materials. The senior citizen must meet the University's admission requirements. Enrollment in credit courses is available once classes begin. Enrollment in noncredit courses is on a space-available basis only after all tuition-paying students have been accommodated. Applications are available from the Office of Finance and the University web site.
Perkins Loan Exit Interviews

The Perkins Loan Program requires that all recipients attend an exit interview before graduating, leaving the University, or attending less than half-time for the semester enrolled. During the interview session, the student is informed of his or her rights and responsibilities, including grace period, deferments and how they work, and cancellation privileges. Students are notified of exit interviews by mail. If a student fails to attend the exit interview or return the required materials, a hold is placed on the student's transcript and/or diploma until the University has received all the proper paperwork required to meet federal regulations. The Federal Direct Student Loan program is a distinctly separate loan program and has another exit process. For information on the Federal Direct Student Loan exit interviews, please contact the Office of Financial Aid.

Deferments

Old Dominion University offers two types of deferments: financial aid and veterans. A deferment is an extension of the payment deadline for tuition and housing charges for students whose financial aid funds or veterans' benefits are not available by the tuition deadline. Generally, the deferment period extends the date of payment by approximately 90 days or until funds become available, whichever comes first. Deferments expire on December 1 for fall, on May 1 for spring, and August 1 for summer. Deferments are a separate program and should not be confused with other University payment arrangements.

Financial Aid: Students who have officially accepted a financial aid offer through the Office of Financial Aid may be granted a deferment automatically. Some types of aid cannot be deferred. For example, federal work study is ineligible since funds are earned as wages throughout the year. Students are responsible for paying any outstanding balance not covered by the amount of aid deferred.

Veterans: Students participating in educational programs through the Department of Veterans Affairs may qualify for a deferment of tuition and housing. Interested students should contact the Office of Military Student Services for more information. Deferments are only granted prior to the tuition deadline for each semester.

Balance of Aid Refunds

Grants, scholarships and loans are credited to the student's account in the order received. After all charges are fully paid, refund checks will be issued as excess payments are credited to the account. Expected installment payments are deducted from the account prior to the release of the refund. All refund checks (except Plus Loan refunds) are made payable to the student and are mailed to the student's permanent home address. The refund check will be mailed three to five business days after the refund entry is made on the account. Due to security reasons, checks are not available for pick up.

Replacement Checks

Checks that are lost, mutilated or destroyed can be replaced. Mutilated or expired checks should be submitted for replacement. For checks that are lost, 10 business days from the date the original check was issued must expire before a written request for a replacement check will be accepted. The ten-day period allows for the original check to be forwarded by the postal service or returned to the University. A “stop payment” of the original check requires two-four business days to process at the bank. Once the stop payment has been confirmed by the bank, a replacement check can be issued. Expect a minimum of an additional two-four business days to process a replacement check. Please note that international checks will take longer.

Education Tax Credits

The Taxpayer Relief Act (TRA) of 1997, enacted by Congress, created two tax benefits for families who are paying for higher education. On January 31 of each year, all eligible students are issued a 1098T form for the prior calendar year. Students are directed to consult a tax professional or the Internal Revenue Service for matters related to tax credits.

Contact Information

Information related to tuition and fees, billing, refunds, payment options and related forms may be directed to the Administrative Services Center located in the downstairs lobby of Alfred B. Rollins, Jr. Hall, Local (757) 683-3030 Toll-free (800) 224-1450, e-mail tuition@odu.edu. Payment address: Office of Finance, Old Dominion University, Alfred B. Rollins, Jr. Hall, Norfolk, VA 23529.

Student Health Insurance

All full-time and part-time students are encouraged to make provision for payment of charges for health services not provided by On Student Health Services. The University may require health insurance for all students on the Norfolk campus in the fall of 2005. Visit the following web site regarding health insurance: http://www.odu.edu/studenthealth, and click on “Health Insurance.”

Motor Vehicle Parking

All motor vehicles parked in University parking facilities must display a valid parking permit. Students, faculty and staff are required to purchase permits; visitors and guests may obtain complimentary one-day parking permits upon request. Permits may be obtained at the parking facility located at 43rd Street and Elkhorn Avenue.

University motor vehicle regulations are enforced year around except as noted in the ODU Motor Vehicle Regulations Manual. Permit regulations are enforced from midnight Sunday until 5:00 p.m. Friday. Evening permits are available for purchase by students attending classes after 3:45 p.m.; evening permits are not valid for daytime parking.

Additional information and copies of the Old Dominion University Motor Vehicle Regulations may be obtained by calling Old Dominion University Parking Services at (757) 683-4004.

Fees for Noncredit Programs

The fees for noncredit programs vary according to the activity. Noncredit courses are free to all senior citizens on a space-available basis.
Student Financial Aid

The Office of Student Financial Aid supports the mission of the University by assisting students and their families in reducing or eliminating financial barriers that might prohibit their participation in the degree programs offered by Old Dominion University. The office administers need-based financial aid programs funded by Federal, State, University, and private sources in the form of grants, Federal Direct Subsidized loans, Federal work-study programs, and both merit-based and need-based scholarships. In addition, the office administers the William D. Ford Federal Direct Unsubsidized Loan program and the Federal Direct PLUS loan program, both of which are non-need-based federally-supported sources of funding. Alternative loan options are also available.

Regulations governing the administration of student financial aid are subject to unanticipated change. Information provided herein is as accurate as possible on the date of printing. For additional and updated information, students and interested parties are invited to visit the office's web site at http://web.odu.edu/af/financialaid.htm or Old Dominion University's home page. http://www.odu.edu.

Scholarships, Grants, Loans, and Student Employment

The University offers a variety of awards each year to qualified students who have been accepted for admission into degree programs. Some of these awards are available only to Virginia residents, while others are awarded without regard to state residency. Student assistance is offered on the basis of scholastic achievement and/or established financial need. Financial need is defined as the difference between the cost of education/attendance at Old Dominion University and the amount of money an applicant and his or her family are expected to make available from their income and assets to meet the expenses of that education. The eligibility for student assistance is offered on the basis of scholastic achievement and/or established financial need. Financial need is determined by a combination of factors, including dependency status, student classification (undergraduate/graduate, grade level), cost of attendance, and aggregate amount borrowed to date, to name a few.

To be eligible for assistance from the major student aid programs, a student must be a citizen or an eligible non-citizen. A student must be admitted and enrolled as degree seeking in an eligible program; must be registered with the Selective Service (if required); must not be in default or owe a repayment or refund on a federally guaranteed loan or grant; and must be in good academic standing (making satisfactory academic progress) to be eligible for financial assistance. Certain aid programs require a student to maintain a full-time status. There is one exception to the requirement that students be admitted on a degree-seeking basis: students who are admitted only for purposes of teacher certification may qualify for a William D. Ford Federal Direct Loan.

Financial aid eligibility is determined on an annual basis, for one academic year (Fall, Spring, Summer) only, and is determined for succeeding years upon re-application and continued eligibility. Applications for Old Dominion University-administered financial aid should be submitted as early as possible in January for consideration in the following academic year. Awards are offered on a first-come, first-served basis. Priority awards of grants funded by the Commonwealth of Virginia as well as for the Federal Supplemental Educational Opportunity Grant (FSEOG) Program are awarded to eligible students whose Free Application for Federal Student Aid (FAFSA) is received by the federal processing agency no later than February 15 preceding the academic year of interest. To be considered for the Annual and Endowed Scholarships administered by the University, an Admissions application or the Scholarship Application for Continuing Students must be received by the University by February 15 preceding the academic year of interest. All admitted students will automatically be considered.

An entering student must be accepted for admission into a degree-seeking program before receiving a financial aid eligibility notification letter; however, a student who has not yet been accepted for admission may apply for financial assistance. Once admitted into an eligible degree program, the student will automatically receive a notice of tentative financial aid eligibility. Announcements of financial aid eligibility for early applicants are generally made before May 1. The applicant will be notified in writing by the Office of Student Financial Aid. In addition, the admitted student is encouraged to monitor the status of his/her application for aid and its subsequent processing by accessing his/her records on the University’s secure online site, LEO Online. Students may be notified by e-mail to their Old Dominion University e-mail accounts throughout the year. Alerts, reminders, and student-specific information are mailed through the University’s secure e-mail system throughout the year, and students are responsible for reading and responding to these communications.

The information regarding financial aid contained in this catalog is subject to changes or deletions without notification. Additional information concerning financial aid is available through the Office of Student Financial Aid. The federal Student Guide, which describes the federal student financial aid programs and how to apply for them, is also available free of charge from the U.S. Department of Education provides efficient and secure access to information and government services and benefits for students via the Access America for Students gateway web site (http://www.students.gov).

Application Requirements

To be considered for financial aid, a student must complete all documents and submit them as soon as possible after January 1 preceding the academic year for which application is made. (For example, a student planning to attend during the Fall Semester, 2005 would submit a financial aid application in January, 2005.) The documents and deadlines are described below. Note: The Free Application for Federal Student Aid (FAFSA) is required of all applicants for financial aid.

Document 1: The Free Application for Federal Student Aid (FAFSA).

Submitting a completed and signed FAFSA initiates the process of applying for financial aid. The information provided by the student (and his/her parents) is used by the University and other awarding agencies to determine financial need and general financial aid eligibility. The FAFSA may be obtained from high schools, community colleges, or any financial aid office. FAFSAs are also mailed to students by the U.S. Department of Education upon the student’s request (call 1-800-433-3243). Because the FAFSA must reflect income for the calendar year preceding the academic year aid is being applied for, it cannot be signed or mailed until after January 1. When completing the FAFSA, use Old Dominion University’s Title IV Institution Code (003728) in Step Six. The FAFSA should be mailed to the U.S. Department of Education’s federal processor, not to Old Dominion University. A pre-addressed envelope is provided with each application. Old Dominion University encourages students to take advantage of the electronic FAFSA option (FAFSA on the web, http://www.fafsa.ed.gov/), which is a secure and convenient method for completing the application process.

Document 2: Student Aid Report (SAR).

Once the FAFSA is received and processed, the federal processing center will mail the Student Aid Report (SAR) to the applicant. Students are strongly encouraged to keep their SARs and all other financial-aid-related documents for future reference. The SAR contains valuable information as well as a unique data release code. Students should also keep copies of all documents used to complete the FAFSA, as they may be requested by the Office of Student Financial Aid as part of the federally-required verification process.

Document 3: Employment Eligibility Verification (Form I-9).

Students who are eligible to participate in the federal work study program will be required to submit certain documents. The Immigration Reform and Control Act of 1986 requires all employees of the University to complete an Employment Eligibility Verification (Form I-9). Student employees who wish to work on or off campus must be prepared to complete the I-9 Form before they begin working.

The I-9 Form cannot be completed unless the employee provides documents to verify both identity and employment eligibility. The following documents will satisfy this requirement:

• A U.S. passport
• A certificate of U.S. citizenship (INS Form N-560 or N-561)
• A certificate of naturalization (INS Form N-550 or N-370)
• An unexpired foreign passport bearing an unexpired endorsement by the U.S. Attorney General for work in the U.S.
• A resident alien card or registration card with a photograph, which authorizes employment
• A temporary resident card (INS Form I-688)
• An employment authorization card (INS Form I-688A)

If one of the previously referenced documents is not available, an applicant or employee must submit both a document verifying employment eligibility and a document establishing identity. Documents that verify employment eligibility include:

• A social security card (unless on its face it shows that its issuance does not authorize employment in the U.S.)
• An unexpired reentry permit (INS Form I-327)
• An unexpired refugee travel document (INS Form I-571)
• An employment authorization document issued by the Immigration and Naturalization Service
• A native American tribal document
Standards of Satisfactory Academic Progress to Maintain Financial Aid Eligibility

Old Dominion University Requirements

Fulfillment of Federal Satisfactory Academic Progress is reviewed and evaluated by the Financial Aid Office in compliance with federal regulations. In order to qualify for assistance through the Office of Student Financial Aid, students must be accepted by the University as degree-seeking students. Students must be enrolled at least half-time (50%) to qualify for most financial aid programs. Undergraduate students must be enrolled for a minimum of twelve credit hours per semester (Fall, Spring, or Summer) to be considered full-time. NOTE: The full-time requirement of 12 hours during the Summer term is a federal requirement for student financial aid for undergraduate students, even though it differs from the University standard of nine hours for full-time enrollment for the Summer term (see “Normal Course Load for Undergraduate Students” in the Academic Information section of the catalog). An undergraduate student must be enrolled for a minimum of nine credit hours per semester to be considered enrolled three-quarters time during the Fall, Spring, or Summer semesters. Half-time enrollment is six credit hours per semester, including the Summer semester, for all undergraduate students. Graduate students must be enrolled for a minimum of nine hours during either the Fall or Spring semesters or six hours during the Summer semester to be considered full-time. Half-time enrollment for graduate students is four hours during either the Fall or Spring semesters or three hours during the Summer semester.

Eligibility and award amounts are based on the number of semester hours in which the student is enrolled. For purposes of financial aid, courses taken as Audit courses do not count toward enrolled hours. It may be possible for off-campus students to meet eligibility requirements through credit hours they are taking elsewhere; however, students must be enrolled in at least one Old Dominion University course to meet financial aid eligibility requirements. Off-campus students are encouraged to contact their advisor for additional information.

The following quantitative, time factor and qualitative requirements apply to all of the financial aid programs administered by Old Dominion University with the exception of programs that are governed by state requirements for satisfactory academic progress.

I. Quantitative Requirements

A. To determine the full-time, three-quarter-time, and half-time eligibility status of the student, the University will use the number of semester hours for which the student is enrolled on the last day of the drop/add period of each semester.

B. Measurable degree progress:

Undergraduate students. The student must consistently demonstrate a completion ratio of 75% of courses attempted. For example, a student who has enrolled in (attempted) 60 semester credit hours must have successfully completed (earned) 45 semester credit hours to maintain measurable degree progress for financial aid eligibility. Graduate students. The student must consistently demonstrate a completion ratio of 80% of all courses attempted.

II. Allowable Time

All students must meet the University’s standards for Regulations for Continuance found in the Academic Information section of this catalog. The maximum allowable time to be eligible for most financial aid programs for a full-time undergraduate student is five years or 10 semesters. The maximum allowable time to be eligible for financial aid for a full-time master’s degree student is three years and for a full-time doctoral degree student four years. Certain additional restrictions on maximum allowable time to maintain eligibility for state grants may be legislated during the period covered by this catalog.

III. Qualitative

The Financial Aid Office will conduct a review at the end of the Spring semester of each academic year to determine the student’s successful progression toward obtaining a degree by comparing cumulative grade point average to hours earned. Qualitative satisfactory academic progress for undergraduate students is evaluated in accordance with the following table:

<table>
<thead>
<tr>
<th>Hours Earned</th>
<th>Minimum GPA</th>
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<tr>
<td>1-25</td>
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<tr>
<td>26-57</td>
<td>1.70</td>
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<td>58-89</td>
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* Additional restrictions, such as minimum GPA or maximum hours attempted, affecting state grant eligibility may be enacted during the period covered by this catalog.

IV. Review Policies

A. Following the Spring semester each year, the financial aid recipient’s academic status will be reviewed. If the student has not maintained satisfactory academic progress, his or her financial aid will not be processed or will be canceled.

B. The following shall be considered as credits completed:

1. A through D- grades, undergraduate
2. A through C- grades, graduate
3. P - passing with credit

C. The following shall not be considered as credits completed:

1. F grades
2. O audit, no credit
3. W withdrawal
4. I incomplete
5. WF unofficial withdrawal
6. Q grades

D. Students who do not complete any credits, who receive a 0.00 GPA, or who do not successfully meet the satisfactory academic progress standards stated above will be placed on financial aid suspension.

E. Students who enroll and subsequently withdraw after the official tuition deadline and receipt of aid for two semesters are ineligible for further financial aid. Example: Student enrolls Fall 2004, receives financial aid, and then withdraws. Student enrolls Spring 2005, receives financial aid, and then withdraws. The student is ineligible for financial aid beginning Summer 2005 and thereafter. This policy is not subject to appeal.

F. Students who drop all courses prior to the official tuition deadline will be required to return all financial aid received, including loan proceeds and excess aid (“balance of aid”). Aid will be canceled and the student will be billed for all aid received. This policy is not subject to appeal.

V. Appeal of Financial Aid Suspension

A. Once a student has been placed on financial aid suspension as a result of the routine annual review, he or she may appeal this action by submitting, in writing, a completed Satisfactory Academic Progress Appeal Form. The completed form should be accompanied by the required supporting documents from the student’s advisor. Completed forms should be submitted to the
student's financial aid counselor. The appeal must document (a) reasons the student did not achieve minimum degree progress requirements and (b) the student's action plan to prevent recurrence of the academic progress deficiency. The Satisfactory Academic Progress Appeal Form packet is available from the office's web site. Note: The student must sign the packet and return it to the Office of Student Financial Aid before the deadline for reinstatement.

B. The Office of Student Financial Aid will review the appeal and the student will be advised, in writing, of the decision. The decision will be based on factors that are beyond the control of the student such as documented medical factors.

C. A student wishing reconsideration of a denied appeal may request reconsideration, in writing, with appropriate documentation attached, to the Assistant Director for Financial Aid Counseling Services, whose decision is final.

D. Upon academic suspension, financial aid suspension is automatic. Academic suspension may be appealed through the director of academic continuance to College Appeals Committee, if an undergraduate student, or the Graduate Appeals Committee, if a graduate student.

E. Successful appeals of academic suspension (item D above) do not automatically result in reinstatement of aid eligibility. Request for consideration for reinstatement of financial aid eligibility is a separate process. The appeal (Satisfactory Academic Progress Form packet) for financial aid reinstatement must be submitted, in writing, to the student's financial aid counselor. Consideration for reinstatement of financial aid will consist of a strict review of degree progress and the student's plan for program completion without recurrence of the deficiency. An undergraduate must demonstrate satisfactory completion of a minimum of six credit hours (within one term) with at least a 2.00 GPA, after the date of academic suspension, on her or his own, to be considered for financial aid reinstatement. The student will be notified in writing of the counselor's decision.

VI. Conditions for Reinstatement

Students on financial aid suspension may be eligible for reinstatement after successful completion of the required number of units with the required minimum GPA as stated previously. Any student who has been denied financial aid at another postsecondary institution due to academic progress insufficiency may be denied aid at Old Dominion University until that student has satisfactorily completed six credit hours (within one term) on his or her own.

No undergraduate student who has earned 90 or more credit hours with a cumulative GPA less than 2.00 is eligible for financial assistance under any circumstances. This institutional policy is not subject to appeal.

Federal Programs

Students must submit the Free Application for Federal Student Aid (FAFSA) to determine eligibility for all of the following federal financial aid programs.

Federal Pell Grant Program. A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are only awarded to undergraduate students who have not earned a bachelor's degree. For many students, Pell Grants provide a foundation of financial aid to which other aid may be added.

Federal Supplemental Educational Opportunity Grant (FSEOG). Like the Federal Pell Grant, this award assists undergraduate students only and does not have to be repaid. This grant is made to students who demonstrate exceptional financial need (very low expected family contribution, or EFC). Students who meet all other eligibility criteria and whose FAFSA data were received by the federal processing agency by the priority deadline (February 15) are considered for this grant. It is awarded on a first-come, first-served basis. Federal funding for this program is extremely limited.

Federal Work Study (FWS) Program. This program provides jobs for undergraduate and graduate students with financial need, allowing them the opportunity to earn money for educational expenses. The FWS program encourages community service work such as tutoring and work related to the course of study. A student who qualifies for FWS is not automatically guaranteed employment and must compete with other FWS recipients for available positions. The Career Management Center, located at 2202 Webb University Center, maintains a listing of available positions on its web site at http://www.odu.edu/ao/cmc/news.html.

Federal Perkins Loan Program. This low-interest (5 percent) loan is targeted for students with exceptional financial need. A Federal Perkins Loan borrower is not charged an origination fee or an insurance premium. A Federal Perkins Loan must be repaid.

Federal Direct Student Loan Programs

Old Dominion University participates in the William D. Ford Federal Direct Loan Program and thus receives loan funds directly from the U.S. Department of Education upon disbursement (payment) to eligible students. There are three kinds of loans:

William D. Ford Federal Direct Subsidized Loans. The federal government will pay the interest on these loans while students are in school and during deferments (postponements of repayment). Students must demonstrate financial need to receive this type of loan. Both undergraduate and graduate students may be eligible and must be enrolled at least half time. Like all other forms of aid, loans are disbursed to student accounts on a semester-by-semester basis, and eligibility must be re-confirmed prior to release.

William D. Ford Federal Direct Unsubsidized Loans are available to eligible students regardless of financial need, but students will be required to pay all interest charges, including the interest that accumulates during deferments.

The Federal Direct Parent Loan for Undergraduate Students (PLUS) is available for parents of dependent students who filed the FAFSA and who meet other general eligibility requirements. Applications for this loan must be obtained through the Office of Student Financial Aid. They are not automatically offered but are available upon the written request of the parent borrower. Parents are responsible for all interest charges. PLUS Loan applications are subject to credit approval.

State Programs

The Virginia Student Financial Assistance Program (VSFAF) was established to assist students with financial need. VSFAF Funds are used for need-based grants to Virginia resident undergraduates or for assistantships and fellowships to graduate students. As funds are limited, they are awarded on a first-come, first-served basis, with students meeting the priority FAFSA receipt deadline (February 15 receipt by federal processing agency) being given first consideration. Specific Satisfactory Academic Progress requirements that are more rigorous than those for federal financial aid eligibility consideration apply. Interested students are encouraged to visit the State Council for Higher Education in Virginia web site at http://www.schev.edu for detailed information and program regulations and guidelines.

Commonwealth Award. In order to be eligible for a Commonwealth award, a student must be admitted into a Virginia public two or four year college or university. Virginia Guaranteed Assistance Program (VGAP). In order to be eligible for a VGAP award, a student must meet all the Commonwealth award requirements, and must also be a graduate of a Virginia high school, have a minimum cumulative high school grade point average of 2.5 on a 4.0 scale, and be classified as a dependent student for federal financial aid purposes. This is a grant and does not have to be repaid. The awards may not exceed tuition and required fees. Additional restrictions, such as minimum GPA or maximum hours attempted, affecting state grant eligibility may be enacted during the period covered by this catalog.

Virginia Guaranteed Assistance Program (VGAP). In order to be eligible for a VGAP award, a student must meet all the Commonwealth award requirements, and must also be a graduate of a Virginia high school, have a minimum cumulative high school grade point average of 2.5 on a 4.0 scale, and be classified as a dependent student for federal financial aid purposes. This is a grant and does not have to be repaid. The awards may not exceed tuition and required fees. Additional restrictions, such as minimum GPA or maximum hours attempted, affecting state grant eligibility may be enacted during the period covered by this catalog.

College Scholarship Assistance Program (CSAP). This grant is awarded to eligible undergraduate students and does not have to be repaid. A recipient must be a Virginia resident working toward a first baccalaureate degree and must demonstrate financial need (FAFSA required), be admitted into a Virginia public institution, be enrolled at least half-time (six credit hours per semester), and have a computed expected family contribution.
Conditions for Disbursement of Financial Aid

The Office of Student Financial Aid publishes a “Statement of Student Responsibility & Conditions for Release of Financial Aid” document each academic year. This statement is included with the initial award notification mailed to the student and is also accessible on the Financial Aid Office page of the University website http://web.edu.edu. When students accept financial aid, they also accept the responsibility that they have read and agreed to comply with the Statement. A limited sample of conditions is as follows:

1. Students are required to communicate immediately with their counselors if they change the number of hours enrolled each semester. Financial aid is based upon full-time, three-quarter-time, or half-time enrollment. If a student’s aid has been calculated based on an enrollment level different from the actual enrollment for that semester, the aid will not be released until the student has notified the counselor and the counselor has reviewed and recalculated aid eligibility. Financial aid eligibility changes when enrollment level changes. Students who drop courses are responsible for notifying the financial aid counselor immediately. Aid will be reduced accordingly and financial aid already received will be due back to the University. This also applies to “balanced aid” payments made to students prior to approval or to drop courses.

2. The student is responsible for repayment of any and all financial aid received if adjustments resulting from unreported or misrepresented information discovered through verification, third-party notices, account reviews, and/or Quality Assurance findings lead to reductions in aid. All students who appear to qualify for a Federal Pell Grant are required to complete all information submitted on the FAFSA as part of the verification process. Documents such as Federal Income Tax returns, W-2 forms, Leave and Earnings Statements, notices of SSI benefits, and Verification Worksheets will be required. Other documents may be requested to confirm marital status or other information provided on the FAFSA during the verification process.

3. The student is responsible for reporting additional educational assistance received through sources other than the Financial Aid Office. Financial aid may be adjusted according to federal regulations as a result of additional educational assistance received and not reflected initially. The student bears responsibility for reporting any additional aid in the form of scholarships from outside sources, Vocational Rehabilitation Benefits, Graduate Tuition Scholarships, Veterans Benefits, Senior Citizen Tuition Waivers, Employer Assisted Tuition Payments, Third Party Payment Agreements involving any outside group or company, and all other forms of assistance. The student must report these external sources of financial assistance immediately to his/her financial aid counseling team.

4. Federal Direct Student Loans and Federal Perkins Loans require Promissory Notes. Federal Direct Student Loan promissory notes may be signed online. Federal Perkins Loan Promissory Notes are produced by the Office of Student Financial Aid after all eligibility conditions have been met. Students must complete and sign the promissory notes and return them to the Financial Aid Office before the loan process can be completed. Entrance loan counseling is required of all first-time borrowers prior to release of loan proceeds.

5. Transfer credit evaluations for new transfer students may result in additional loan eligibility. Students may request an account review if such changes become necessary. If the date of complete withdrawal precedes the date on which 60% of the academic semester has been completed, the federal portion of Title IV student loan financial assistance will be due back to the federal programs. The University policy regarding tuition refunds following withdrawal is stated in the catalog and is independent of the Return of Title IV funds regulations.

6. A tentative or conditional financial aid package assumes a level of availability of funds. If the date of complete withdrawal precedes the date on which 60% of the academic semester has been completed, the federal portion of Title IV student loan financial assistance will be due back to the federal programs.

Scholarships

Awards Based on Admission to the University

Admissions Scholarships

All entering fall freshmen and transfer students who submit their admission application and ALL required credentials by the early action/scholarship deadline (freshmen – December 15 and transfer – March 15) are considered for merit-based scholarships offered through the Old Dominion University Admissions Office. The admission application serves as the merit-based scholarship application.

Information regarding minimum requirements for eligibility consideration can be obtained from the Admissions website.

Honors College Academic Scholarships

The Honors College scholarships are awarded to a select group of entering freshmen who, on the basis of their academic achievement, are chosen to participate in the program. The scholarship may be renewed for three (six semesters) provided students continue to meet program participation standards. Recipients are selected by the Dean of the Honors College. (PARTICIPATION) (757) 683-4685

Annual and Endowed University Scholarships

Scholarships at Old Dominion University have been established through the generosity of individuals, organizations and corporations to recognize outstanding academic performance and to assist students in pursuing their educational goals. Scholarship awards are based on a variety of criteria. For some awards, eligibility is entirely determined by academic merit or potential. Other requirements might include demonstrated financial need, field of study, state or city residency, graduation from a particular high school or participation in a specific program, organization or activity. Generally, recipients have earned at least a 3.7 grade point average (on a 4.00 scale) and are full-time, degree-seeking students.

All first-time freshmen and transfer students will automatically be considered for academic and endowed scholarships based on their admissions application. The majority of scholarships offered to Old Dominion University students are based on information already known to the University.

The Scholarship Form for Continuing Students is available for students who are (1) students who began attending Old Dominion University before August 1999, or (2) students who have a change in scholarship eligibility according to the Criteria Check List (included in the Scholarship Form). Continuing students who meet the above circumstances must complete and submit the form to the Office of Student Financial Aid, 121 Rollins Hall, Norfolk, VA 23529-0052. The form must be received by February 15 each year to be considered for scholarships for the following academic year. The information provided on the Form for Continuing Students will be maintained and used for scholarship selection for the duration of the student’s attendance at Old Dominion University. It is not necessary to complete the form more than once during attendance at Old Dominion University, UNLESS the required information has changed. To determine eligibility for need-based scholarships (designated by an asterisk (*)), students must also file the Free Application for Federal Student Aid (FAFSA) PRIOR to February 15 of the appropriate academic year.

Selection procedures vary for these awards. All scholarships require admission to and enrollment in a degree program at Old Dominion University. For some scholarships, a portfolio, an audition or participation in a specific program may be required. The additional steps, if required, are summarized following each scholarship description.

Students will receive written notification of any scholarship for which they have been selected. Most scholarships will be awarded in April and May of each year. All scholarships must be formally accepted in writing.

Awards for Entering Freshmen

The Nicholas Andrasz Academic and Social Service Endowed Scholarship was established by Nicholas Andrasz to assist an entering freshman who has graduated from a Virginia Beach high school. The recipient must have a minimum 3.25 grade point average, minimum 1000 combined SAT score and must have spent a considerable amount of nonpaid volunteer time helping to make his/her community a better place. The Beta Sigma Phi-Alice Brewer White Memorial Endowed Scholar-
ship is made possible by an endowment established in 1985. This award is to assist an entering freshman who is from Southside Hampton Roads. Preference will be given to students with a 3.20 grade point average and Beta Sigma Phi affiliations, including mother, grandmother or aunt. The student may also be a member of Beta Sigma Phi. Leadership ability and community involvement are factors in selection. This scholarship is renewable.

The James L. Bugg Scholarship was established in 1978 by the Old Dominion University Alumni Association to honor this former University president. The award is made to an alumnus’ son or daughter who has participated in extracurricular activities and community service and displays top academic achievement.

The CHROME Scholarships are funded by the University and awarded to entering freshmen who have participated in a certified high school CHROME club. Recipients must intend to pursue a degree in engineering, mathematics, science, technology or a related field.

The Claire Virginia Dabel Memorial Scholarship is funded through an endowment established by Dr. Virginia B. Newbern to assist one or more freshmen students majoring in the field of biology.

The Peter G. Decker Scholarship is funded by an endowment established by Peter G. Decker and the estate of Celia Stern. This scholarship is awarded to students who have graduated from the Old Dominion Lambert's Point Summer Program and are admitted to Old Dominion University upon completion of high school.

*The E. L. Hamm Endowed Scholarship was established by Edward L. Hamm, Jr. to assist a student who is residing in or has resided in Norfolk Redevelopment & Housing Authority properties. The recipient must be a full-time undergraduate student who demonstrates financial need. (FAFSA)

*The James W. Ingersoll Memorial Scholarships are made possible by an endowment given by the Ingersoll family, their friends and the citizens of Portsmouth, Virginia. These awards assist entering freshmen who demonstrate financial need and are graduates of Churchland High School in Portsmouth. (FAFSA)

The James V. and Donna L. Koch Endowed Scholarship was established by the Old Dominion University Educational Foundation to honor this former University president and his wife. This four-year scholarship is awarded to an incoming freshman with a minimum 1300 SAT score, 3.80 cumulative grade point average and extracurricular involvement.

The Edgar and Kathleen Kovner Scholarships for outstanding high school scholars are awarded each year to entering freshmen in the Frank Batten College of Engineering and Technology. The awards are based on performance in a high school curriculum that emphasized mathematics and the sciences. These scholarships are renewable for three years for recipients who remain enrolled full time in the Frank Batten College of Engineering and Technology and maintain a 3.00 grade point average.

The A. D. Morgan Scholarships are supported by a trust established in 1968 by Dr. A.D. Morgan and Annye Lewis Morgan. The scholarships assist Old Dominion University students who are U.S. citizens and residents of the greater Norfolk area. Preference is given to the members of the Freemason Street Baptist Church of Norfolk. Recipients are selected by the trustees of the Scholarship Fund and coordinated through the Old Dominion University Office of Student Financial Aid.

*The Patricia Ann Vaughan Myers ’57 Memorial Scholarship was established by Hugh L. Vaughan in honor of his daughter, Patricia Ann. It assists an entering freshman who is a Virginia resident and a resident of the Tidewater area. The student must demonstrate financial need, academic merit and be a full-time student under the age of 24 who lives at home. (FAFSA)

Norfolk School Board Scholarships are funded by the University and awarded to ten entering freshmen graduates of Norfolk public or private schools. Students are selected based on their high school academic achievement. Recipients may qualify for a one-year renewal of the award, which equals full in-state tuition (up to 15 credit hours per semester), by maintaining a 2.50 grade point average and completing 24 academic units at the end of the first academic year. Recipients are selected by the Director of Guidance of the Norfolk Public School system, in conjunction with the high school guidance counselors.

The Parents’ Association of Old Dominion University Freshman Scholarship is funded by an endowment by the organization to assist an outstanding entering freshman who has demonstrated academic merit and leadership skills.

The Parents’ Association of Old Dominion University Freshman ’90 Scholarship is funded by an endowment by the organization to assist an outstanding entering freshman who has demonstrated academic merit and leadership skills.

*Regional Scholarships provide awards of $1,200 to entering freshmen from Accomack County, Chesapeake, Franklin, Hampton, Isle of Wight, Newport News, Northampton County, Portsmouth, Southampton County, Suffolk, Surry and Virginia Beach public schools. Students must demonstrate financial need. Students may qualify for a one-year renewal of the award if they maintain a 2.50 grade point average, complete 24 academic units for the year and demonstrate financial need as determined by the Free Application for Federal Student Aid. (FAFSA)

Old Dominion University Dominion Scholarships

The Theodore F. and Constance C. Constant Dominion Scholarship was established by Theodore F. and Constance C. Constant to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test. The recipient must be a Virginia resident, with preference given to Hampton Roads residents.

The Mary T. Cooper and Dudley Cooper Dominion Scholarship was established by Mary T. Cooper and Dudley Cooper to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test. The recipient must also be a United States citizen.

The Clifford and Ann Cutchins, III Dominion Scholarship was established by Mr. and Mrs. Clifford A. Cutchins, III to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test.

The Robert L. and Geraldine E. Hodrey Alumni Association Memorial Scholarship Endowment was established by the Old Dominion University Alumni Association to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test.

The Harry H. and Marie Mansbach Dominion Scholarship was established by Harry H. and Marie Mansbach to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test.

The Thomas J. and Mary V. D. Card to assist an undergraduate or graduate student who is majoring in Women’s Studies. Information concerning audition requirements is available from the Music Department. (FAFSA)

The Clifford and Ann Cutchins, III Dominion Scholarship was established by Mr. and Mrs. Clifford A. Cutchins, III to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test.

The William B. Spong, Jr., Dominion Scholar Endowment was established by the Old Dominion University Alumni Association to assist incoming freshmen who present a minimum 3.25 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1200 or better on the Scholastic Aptitude Test.

The James W. Ingersoll Memorial Scholarships are made possible by an endowment given by the Ingersoll family, their friends and the citizens of Portsmouth, Virginia. These awards assist entering freshmen who demonstrate financial need and are graduates of Churchland High School in Portsmouth. (FAFSA)

The Johnson Scholarship is funded by a bequest from the late Herbert Altschul, a Norfolk businessman and former owner of Altschul’s Department Store. This award assists three juniors who demonstrate financial need, are U.S. citizens and are majoring in the Humanities. (FAFSA)

The Eliot S. Breneiser Memorial Scholarship was established to assist a full-time music major in either the piano performance program or the music education program with a concentration in piano. Information concerning audition requirements is available from the Music Department. (FAFSA)

The Friends of Women’s Studies Scholarship is funded by an endowment in honor of Carolyn Rhodes for students majoring in women’s studies. Two scholarships are awarded: one to a graduate student seeking an M.A. in humanities and one to an undergraduate student. Undergraduate students must demonstrate financial need and have a minimum grade point average of 3.00. Graduate students must have a minimum grade point average of 3.50. Recipients can be full- or part-time students. (FAFSA)

*The Barbara M. Gorlinsky Memorial Fine Arts Scholarship is made possible by an endowment the Gorlinsky family established in memory of their daughter. It is designed to assist students with financial need who are...
fine arts majors. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO, FAFSA) (757) 683-4047

The Eva May Morris Gregory Dance Scholarship honors someone who emulates Ms. Gregory’s approach and perspective regarding dance. The recipient must be a rising senior majoring in dance with a minimum 3.00 grade point average. The recipient will be administered by the Music Department. (AUDITION, PARTICIPATION) (757) 683-4047

The Lee and Bernard Jaffe Family Endowed Scholarship Fund acknowledges excellence in spoken and written communications using the English language. The recipient must be a rising junior or senior with a declared major in English or Communications with a 3.50 grade point average and recommended by the department chair and dean.

The Jerome J. Kern Music Scholarship was established by William A. Goldback in memory of his uncle. The recipient must be an undergraduate student of exceptional musical ability who is or plans to be a music major. Information concerning audition requirements is available from the Music Department. (AUDITION, PARTICIPATION) (757) 683-4041

The Wayne Lustig Endowed Scholarship, established by Mrs. Elaine B. Lustig, assists undergraduate students in the College of Arts and Letters who demonstrate academic merit and participate in an aspect of the University’s athletic program, either at the intercollegiate, club or intramural level.

The Ralph and Charlotte Margolius Scholarship has been given to assist full-time students enrolled in the B.F.A., B.A. with studio major, B.A. in art education or the M.A./M.F.A. program in visual studies in the Art Department. (PORTFOLIO) (757) 683-4047

The Old Dominion University Dance Program Scholarship was established to assist a full-time dance major with outstanding ability/potential in dance.

The James Harrison Parker Scholarship Fund was established by the Thistle Foundation to assist a student majoring in English with an emphasis in composition. The recipient must be a rising junior and have a minimum cumulative 3.00 grade point average.

The Harvey Ronald Saunders Memorial Endowed Scholarship was established by Mr. and Mrs. Louis M. Saunders to assist an undergraduate or graduate student majoring in the arts/fine arts with an emphasis in painting or drawing. The recipient must have a 3.00 minimum grade point average, demonstrate financial need and be a citizen of either the United States or Israel. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO, FAFSA) (757) 683-4047

The Charles K. Sibley Art Scholarship is funded by an endowment made possible by contributions from the friends and patrons of the former Old Dominion University professor. Awards are to assist graduate or undergraduate students majoring in studio art or art history. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO) (757) 683-4047

The David Scott Sutelan Memorial Scholarship is made possible by an endowment established by David, Charles and May Scott Sutelan. The recipient will be seeking a master in fine arts in the creative writing program.

The Caroline Heath Tunstall-Elizabeth Calvert Page Dabney Scholarship is funded by an endowment contributed in honor of two former members of the Old Dominion University English Department. This scholarship is awarded to an upperclassman in the College of Arts and Letters who has obtained at least a 3.50 grade point average.

The Charles E. and Frieda O. Vogan Music Scholarship assists undergraduate music students. Information concerning audition requirements is available from the Music Department. (AUDITION, PARTICIPATION) (757) 683-4041

The Forrest P. and Edith R. White Endowed Scholarship Fund was established by Edith R. White to provide scholarships to students studying acting in the Old Dominion University Communication and Theatre Arts Department. (AUDITION)

The College of Business and Public Administration

The Bagwell-Jones Endowed Scholarship was established by Dorothy M. Jones in memory of her parents. The recipient must be a rising senior in the College of Business and Public Administration with the highest grade point average of three prior years at Old Dominion, as well as demonstrate financial need. (FAFSA)

The Constant Dominion Business Scholarship was established as an endowment by Mr. and Mrs. Theodore F. Constant. The scholars selected will be among the best students selected to enter the University’s College of Business and Public Administration. The award will be given to at least two Virginia residents each year.

The Theodore F. and Constance C. Constant Fellowships are funded by an endowment that assists two full-time graduate students in the College of Business and Public Administration.

The Dehority Accounting Alumni Scholarship was established in 1993 by the Old Dominion University Accounting Alumni. It is awarded to a student who has completed a minimum of 60 semester hours majoring in accounting with a grade point average of 3.00 or above.

The Hunter A. Hogan Scholarship is funded by an endowment established by Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration. (FAFSA)

The Janet L. Hume Scholarship is funded by an endowment given by Julian Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration who has demonstrated academic merit. Preference is given to a student at least 30 years old who has demonstrated financial need. (FAFSA)

The Dorothy M. Jones Memorial Scholarship has been given anonymously by a former student to honor Professor Jones, associate professor emeritus in the College of Business and Public Administration. This scholarship is awarded to a junior who has declared a major in the College of Business and Public Administration. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)

The Lori E. Kaplan Real Estate Endowed Scholarship was established in memory and honor of the late Lori E. Kaplan by Harvey Lindsay, Janet Abraham and Roslyn Kaplan and funded by a scholarship given by Harvey Lindsay Commercial Real Estate, friends and family of Lori E. Kaplan and the proceeds of the annual Lori Kaplan Memorial Golf Tournament. Preference is given to students with a declared major in financial management or real estate who are a minimum 2.75 grade point average, demonstrated interest in the profession of real estate, demonstrated commitment to the community and those currently employed full or part time.

The Barry M. Kornblau Real Estate Endowed Scholarship was established by Barry M. Kornblau for a student who is a junior or senior in the College of Business and Public Administration. A major in financial management with an emphasis in real estate and a grade point average of 3.25 are required.

The Norfolk-Tidewater Chapter of CLU and ChFC Insurance Scholarship was established to assist a junior or senior majoring in risk and insurance in the College of Business and Public Administration. The student must be in good academic standing with the University. Preference is given to students who demonstrate a high grade point average, extracurricular activities and financial need. (FAFSA)

The Charles H. and Mary Kathryn Rotert Scholarship is funded by an endowment established by Mr. and Mrs. Charles H. Rotert Jr. This scholarship is awarded to a deserving student in the College of Business and Public Administration.

The Marvin and Marilyn Simon Family Endowed Fellows Program in Business was established in 2001 to assist a master’s or doctoral degree candidate attending the College of Business and Public Administration. The recipient will be a talented student studying in business who has outstanding academic ability.

The Hunter A. Hogan Scholarship is funded by an endowment established by Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration. The award will be given to at least two Virginia residents each year.

The Dehority Accounting Alumni Scholarship was established in 1993 by the Old Dominion University Accounting Alumni. It is awarded to a student who has completed a minimum of 60 semester hours majoring in accounting with a grade point average of 3.00 or above.

The Hunter A. Hogan Scholarship is funded by an endowment established by Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration. (FAFSA)

The Janet L. Hume Scholarship is funded by an endowment given by Julian Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration who has demonstrated academic merit. Preference is given to a student at least 30 years old who has demonstrated financial need. (FAFSA)

The Dorothy M. Jones Memorial Scholarship has been given anonymously by a former student to honor Professor Jones, associate professor emeritus in the College of Business and Public Administration. This scholarship is awarded to a junior who has declared a major in the College of Business and Public Administration. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)

The Dorothy M. Jones Memorial Scholarship has been given anonymously by a former student to honor Professor Jones, associate professor emeritus in the College of Business and Public Administration. This scholarship is awarded to a junior who has declared a major in the College of Business and Public Administration. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)

The Marilyn and Marilyn Simon Family Endowed Fellows Program in Business was established in 2001 to assist a master’s or doctoral degree candidate attending the College of Business and Public Administration. The recipient will be a talented student studying in business who has outstanding academic ability.

The Marvin and Marilyn Simon Family Endowed Fellows Program in Business was established in 2001 to assist a master’s or doctoral degree candidate attending the College of Business and Public Administration. The recipient will be a talented student studying in business who has outstanding academic ability.

The Hunter A. Hogan Scholarship is funded by an endowment established by Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration. The award will be given to at least two Virginia residents each year.

The Dehority Accounting Alumni Scholarship was established in 1993 by the Old Dominion University Accounting Alumni. It is awarded to a student who has completed a minimum of 60 semester hours majoring in accounting with a grade point average of 3.00 or above.

The Hunter A. Hogan Scholarship is funded by an endowment established by Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration. (FAFSA)

The Janet L. Hume Scholarship is funded by an endowment given by Julian Robert Hume III. This scholarship is provided to assist a junior with a declared major in the College of Business and Public Administration who has demonstrated academic merit. Preference is given to a student at least 30 years old who has demonstrated financial need. (FAFSA)

The Dorothy M. Jones Memorial Scholarship has been given anonymously by a former student to honor Professor Jones, associate professor emeritus in the College of Business and Public Administration. This scholarship is awarded to a junior who has declared a major in the College of Business and Public Administration. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)

The Dorothy M. Jones Memorial Scholarship has been given anonymously by a former student to honor Professor Jones, associate professor emeritus in the College of Business and Public Administration. This scholarship is awarded to a junior who has declared a major in the College of Business and Public Administration. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)
an endowment given by Lena Rosa K. Conley, an alumnus and retired staff member of Old Dominion University, in memory of her brother. This scholarship assists a full-time graduate student in education. Preference is given to study in the area of special education. (FAFSA)

The Frank Batten College of Engineering and Technology

*The Civil and Environmental Engineering Visiting Council (CEVEC) William M. Boone Memorial Scholarship is awarded based on both need and merit to a full- or part-time, junior, civil and environmental engineering student. (FAFSA)

The John Foster Memorial Endowment was established by the Virginia Surveyor’s Foundation to assist a student enrolled in the surveying program within the Frank Batten College of Engineering and Technology.

The Edgar and Kathleen Kovner Scholarships. In addition to the Enterprising Freshmen Awards, the Kovner endowment provides several one-year scholarships: (a) for continuing engineering students who demonstrate academic achievement and (b) for engineering students who participate in extracurricular activities.

The Stuart H. Russell Memorial Scholarship is made possible by an endowment established by the estate of Oliva L. Spicer. The scholarship is awarded to a deserving student in the Frank Batten College of Engineering and Technology with particular preference given to a student in the Electrical and Computer Engineering Department with an interest in electronics.

*The William D. Stanley Scholarship Fund in Engineering Technolo

*The Sumitomo Machinery Corporation of America Endowed Scholar

*The Virginia Society of Professional Engineers Scholarship, established in 1991, is awarded to a junior or a senior in the Frank Batten College of Engineering and Technology. The student must have attended high school in southside Hampton Roads, be active in College of Engineering and Technology clubs and societies and be a U.S. citizen. An essay must be submitted to the Engineering Scholarship Committee. (ESSAY)

*The Edgar L. White Endowed Scholarship was established by Edward L. White, Jr. and Margaret W. Moore to assist a computer engineering student. The recipient must be a Norfolk resident, have a minimum 3.30 grade point average and demonstrate financial need. (FAFSA)

*The George C. Winslow Scholarship is made possible by an endowment to assist a graduate or undergraduate student who has demonstrated financial need and has obtained at least a 2.50 grade point average while pursuing a degree in mechanical engineering. (FAFSA)

The College of Health Sciences

The Thomas Charles Auclair (’78) Scholarship is made possible through an endowment given by Mr. and Mrs. George E. Auclair in memory of their son. The scholarship supports a student pursuing studies in environmental health.

The Captain Kenneth B. Austin USN and Mrs. Virginia Frank Keller Austin Scholarship for Nursing Students was established by Captain Kenneth B. Austin to assist a full-time student with junior status who has been accepted into the School of Nursing. The recipient will be selected based on merit and demonstrated leadership experience.

*The Gene W. Hirschfeld Scholarship is supported by an endowment given by the former chair of the Department of Dental Hygiene and Dental Assisting. The scholarship is awarded to undergraduate or graduate students who demonstrate financial need and are enrolled in the Dental Hygiene Program. (FAFSA)

*The TOWN Foundation Scholarship Awards were established to encourage students with academic ability who lack sufficient financial means to attend the Old Dominion University School of Nursing. Each recipient must meet the normal admission standards of the Old Dominion University School of Nursing and demonstrate substantial financial need. (FAFSA)

*The Lettie Pate Whitehead Nursing Scholarship is made possible by an endowment given by the Lettie Pate Whitehead Foundation, Inc. It is awarded to deserving females demonstrating financial need. (FAFSA)

The College of Sciences

The Clifford L. and Lillian R. Adams Scholarship is made possible by an endowment established by Mr. and Mrs. Adams. Mr. Adams, the former director of the Research Foundation and department chair, taught in the Department of Physics at Old Dominion University for many years. The scholarship is awarded to a full-time undergraduate with a declared or intended major in physics.

The Virginia S. Bagley Endowed Scholarship is made possible by Mrs. Bagley’s estate and is awarded to a graduate or undergraduate student in the Department of Biological Sciences.

The Robert Bock Memorial Endowed Scholarship Fund was established by the Bock family to assist a resident of Accomack or Northampton County. The recipient must be a junior or a senior majoring in the biological sciences with a cumulative grade point average of 3.00. Priority is given to residents of Chincoteague.

*The Hampton Roads Maritime Scholarship is funded by an endowment from the Hampton Roads Maritime Association and is given to a graduate student in the Department of Ocean, Earth and Atmospheric Sciences with financial need. (FAFSA)

The Neil and Susan Kelley Endowed Scholarship Fund, established by Neil Kelley in 2001, provides financial support to a graduate student pursuing a Master of Science in Oceanography. The scholarship is awarded strictly on merit and may be renewed annually.

The Science Museum of Eastern Virginia Prize was established by the Science Museum Association of Eastern Virginia in 1998. The award is given to one or more junior students majoring in biology, chemistry, computer science, geology, math, oceanography, physics or psychology. The recipient(s) must have at least a 3.25 grade point average.

The A. Kenneth Scribner Science Scholarships are made possible by the family of the late Mr. Scribner, former President of Virginia Chemicals, Inc. and a former member of the Old Dominion University Board of Visitors. Established in 1978, the scholarships assist students majoring in science or a science-related field who have demonstrated financial need and show capability and industry in scientific studies. Preference is given to graduates of Hampton Roads public schools. (FAFSA)

The C. S. Sherwood III Scholarship is made possible by an endowment from the family and friends of the late Calder S. Sherwood, III, former professor emeritus at Old Dominion University. This scholarship is to assist one rising senior majoring in either geology or chemistry (or on an alternating basis).

*The Jacques S. Zaneveld Endowed Scholarship was established by Dr. Jacques S. Zaneveld to assist a graduate student in the Department of Ocean, Earth and Atmospheric Sciences of the College of Sciences. The recipient must demonstrate a need for funding in the preparation of his/her dissertation in the field of biological oceanography. (FAFSA)

The Honors College

The Brock Foundation Endowed Honors Scholarship was established by The Brock Foundation to assist students enrolled in the Honors College. The recipients must be juniors or rising seniors in good standing in the Honors College and willing to volunteer with ACCESS.

The Cramer-Skinner Scholarships are funded through an endowment established by Mr. and Mrs. Jay G. Cramer in recognition of the contributions to the University by Dr. Richard Skinner, first director of the Honors College. They are awarded to Honors College participants whose academic performance, extracurricular activities and potential for leadership exemplify ideals of scholarship, personal integrity and citizenship. The endowment also provides financial support to bring prominent persons to campus to interact with the honors students. (PARTICIPATION)

The Claire Nessan Academic Honors Scholarship is made possible by Mrs. Claire Nessan to assist an entering or continuing student who participates in the Honors College. (PARTICIPATION)

Military Awards

Army Reserve Officer Training Corps (AROTC) participants may qualify for scholarships. More information on application procedures and program requirements is available from the faculty of the Department of Military Science. (PARTICIPATION) (757) 683-3663

Navy Reserve Officer Training Corps (NROTC) participants may qualify for full or partial scholarships. More information on application procedures and program requirements is available from the faculty of the Department of Naval Science. (PARTICIPATION) (757) 683-4744

*The Lucille D. Thompson Memorial Scholarship is sponsored by the American Legion Women’s Post No. 118. The scholarship is awarded to an honorably discharged veteran who demonstrates financial need.
Other Awards (General)

The Alumni Association Outstanding Scholar Fellowships were established in 1984. The fellowships are awarded to two graduate students in good academic standing who are attending Old Dominion University on a full-time or part-time basis. One fellowship must be awarded to an Old Dominion University alumnus/alumna who has been admitted as a full-time student to a graduate program at the University. (PARTICIPATION, FAFSA)

The Nancy Topping Bazin Scholarship was established by the Friends of Women's Studies to assist a graduate student in women's studies. (FAFSA)

Birshie Family Scholarship Endowment was established by Ms. Frances Levy Birshie. Two scholarships per year will be awarded, The Mayer Isaac 'Easy' Birshie Scholarship and The Oscar Brandeis Birshie and Frances Levy Birshie Scholarship. Recipients must be undergraduate students who have graduated from a high school in Norfolk, Portsmouth or Virginia Beach, have a cumulative grade point average between 3.00 and 3.50 and demonstrate financial need. (FAFSA)

The John R. Burton Jr. Scholarship is made possible by an endowment given by John R. Burton Jr. This scholarship assists students who demonstrate financial need. Preference is shown to high school graduates who have been reared in the Hope Haven Children's Home. (FAFSA)

The Robert Clatby Memorial Scholarship is funded by an endowment from the friends of Robert Clatby for a student who demonstrates financial need. (FAFSA)

The Delta Sigma Lambda Dr. Ruth Harrell Scholarship is supported by an endowment to assist a woman who has received a bachelor's degree and is a full- or part-time graduate student at Old Dominion University. Selection is also based upon scholastic ability, financial need and good personal character. Preference is given to those students who have lived in the Commonwealth of Virginia for at least one year. Students must also complete a separate application, which is available in the Old Dominion University Women's Center. Delta Sigma Lambda members are eligible for the award. (FAFSA) (757) 683-4109

The Delta Sigma Lambda Glenny Burns Scholarship is supported by an endowment which assists a female undergraduate student 25 years or older who has attended college for a minimum of one year. Delta Sigma Lambda members are eligible for the award. Preference is given to students who demonstrate financial need. Students must complete a separate application, which may be obtained from the Old Dominion University Women's Center. (SPECIAL APPLICATION, FAFSA) (757) 683-4109

The Ellis Family Endowed Scholarship was established by Janet A. and John H. Ellis to assist high school seniors awarded a Hampton Roads public high school. The recipient must be an undergraduate student of good character with financial need. Preference will be given to individuals who participated in the Tidewater ACCESS or Learning Bridge programs. (FAFSA)

The Holland Dunston Ellis Jr. Memorial Scholarship has been established through an endowment gift from Mrs. Lavonne P. Ellis in memory of her husband. The award is to assist a minority student who is a Virginia resident and demonstrates financial need. (FAFSA)

The Charles H. Eure Memorial Scholarship is awarded to a marine science or engineering student who has a 3.00 grade point average and is of sound moral character. Preference will be given to a STASR (South Tidewater Association of Ship Repairers) company family member. (FAFSA)

The Hackworth-Hobbs Endowed Scholarship was established by Dorothy and Charles Hackworth and Charles Hackworth II to assist an undergraduate student with a 3.2 grade point average who demonstrates need and has participated in student activities and non-paid volunteer community activities. (FAFSA)

The Haislip-Rorrer Scholarship was established in 2001 by Wallace G. and Linda Haislip. The undergraduate scholarship recipient must demonstrate financial need and leadership experiences, be a resident of the southside of Hampton Roads and have a minimum 3.00 grade point average. (FAFSA)

The R.K.T. “Kit” Larson Scholarship is made possible by an endowment established in memory of Mr. Larson by his friends and colleagues of The Virginian-Pilot newspaper. The scholarship is awarded to a junior or senior with financial need who is enrolled full-time and works on school, community or University publication. Recipient must be a resident of a Virginia or North Carolina city or county served by The Virginian-Pilot. (FAFSA)

The Lillian Vernon Endowed Scholarship is funded by an endowment from the Lillian Vernon Foundation. It is awarded to a spouse, child, or grandchild of an active Lillian Vernon employee. Recipient must have a minimum grade point average of 2.80 and demonstrate financial need. (FAFSA)

The Aubrey and Lucille Machen Scholarship is made possible by an endowment established in 1992 by Robert F. and Nancy M. Wiedermann. The award assists a student who meets Old Dominion University's minimum academic requirements and has financial need. (FAFSA)

The Memorial and Recognition Scholarship Fund is an endowed scholarship that will be awarded to a student with a minimum grade point average of 3.00 and is able to demonstrate involvement in community service. (FAFSA)

The Meredith Construction Company Scholarship is made possible by an endowment given by the Meredith Construction Co. Inc., Meredith Realty, et al. and members of the Meredith family. The award is given to a graduate student demonstrating academic merit in his/her chosen curriculum. (FAFSA)

The Steve Russell Morrison Memorial Endowed Scholarship has been established by the family and friends of Steve Russell Morrison and the Epsilon Beta Chapter of Kappa Delta Rho. This scholarship is awarded to a rising sophomore demonstrating leadership and involvement in campus and community affairs. Preference is given to active members of the Epsilon Beta Chapter of Kappa Delta Rho. (ESSAY)

The Norfolk Southern Scholars Program was implemented by the Norfolk Southern Foundation for students who live in the Lambert's Point neighborhood of Norfolk. It is awarded to students who have successfully completed the Lambert's Point Summer Program, are admitted to Old Dominion University and demonstrate financial need. It is renewable for a maximum of three additional years. (FAFSA)

Old Dominion University Faculty Emeriti Association Scholarship is made possible by an endowment established by the organization. This scholarship assists full-time undergraduate students entering their junior year of study, who have high academic credentials. Preference is given to dependent children of current Old Dominion University faculty and faculty administrators. (FAFSA)

The Old Dominion University Faculty Wives and Friends Scholarship is awarded to a woman at least 25 years old who is attending college after an absence of at least a year. The award assists a student who demonstrates merit and financial need. (FAFSA)

The Parents' Association of Old Dominion University Continuing Student Scholarship is provided by the association to assist a continuing student who demonstrates academic merit. (FAFSA)

The James Harrison Parker Memorial Endowed Scholarship was established for the purpose of providing student educational assistance. The recipient must be a junior or senior degree candidate in environmental engineering, coastal engineering, oceanography or biological sciences. The student must demonstrate financial need and have a minimum grade point average of 3.00. Preference may be given to a student who has been active in the local Boys and Girls Club. (FAFSA)

The Alfred B. Rollins Jr. Scholarship was established in 1985 by the Old Dominion University Alumni Association to honor this former president of the University. The award assists a minority student who demonstrates financial need and is in his/her senior year of study. (FAFSA)

The C.S. Sherwood/Portsmouth Community Trust Scholarship was established by the Distribution Committee of The Portsmouth Community Trust. Recipients must be graduates of a Portsmouth, Virginia public high school in the upper 20% of their graduating class, be of good character and demonstrate financial need. (FAFSA)

The Sherwood/Portsmouth Scholarships are funded annually by a trust established by the late Calder Sherwood III, a professor emeritus in the departments of Chemical Sciences and Physics/Geophysical Sciences. Professor Sherwood served on the Old Dominion University faculty for 38 years. The scholarships are awarded to graduates of public high schools in Portsmouth, Virginia who demonstrate financial need. (FAFSA)

The John and Grace Staley Memorial Scholarships are made possible by an endowment from the estate of Grace Staley to assist one male and one female student who successfully completes the University Ladders program. The recipients must have an advisor's recommendation. (FAFSA)

The Town-N-Gown Scholarship has been established by Town-N-
Gown, an association dedicated to promoting cooperation between the Hampton Roads community and the University in order to promote better understanding in fulfilling the aims and ideals of each. The scholarship recipient rotates annually from the following: (1) resident of the greater Hampton Roads area, (2) a member of or dependent of active duty military personnel and (3) a dependent of an Old Dominion University faculty or staff member.

The Hugh L. Vaughan Scholarship has been established by an endowment made by Mr. Hugh L. Vaughan to assist handicapped students. Preference is given to blind students. Recipients must be native-born Virginians.

*The Wachovia Bank, N.A. Endowed Scholarship assists an undergraduate student who is a Virginia resident and demonstrates financial need. First preference is given to a student from Lambert's Point neighborhood, second preference is given to a student from the neighborhoods surrounding the Old Dominion University campus, and the third preference to a student from the Hampton Roads area. (FAFSA)

*The E. C. Wareheim Foundation “Returning Women’s” Scholarship has been established by an endowment to assist one or more returning women from Norfolk, Virginia Beach, Portsmouth, Chesapeake or Suffolk who have demonstrated financial need. Preference is given to students who enroll part-time. (FAFSA)

The Lewis and Lisa Warren Endowed Student Internship was established to provide the opportunity for outstanding students to receive a scholarship financing career-oriented work experience, as a supplement to their academic education. The recipient must be a junior or senior majoring in natural sciences or creative arts.

The Lewis and Virginia Webb Jr. Scholarship was established in 1975 by the Old Dominion University Alumni Association to honor this former president of the University and his wife. It is awarded to the rising junior with the highest grade point average at the end of his/her sophomore year of study.

*The Jane L. and Robert H. Weiner International Affairs Scholarship is made possible through an endowment established by Mr. and Mrs. Weiner to assist a student who will be studying abroad through the International Student Exchange Program (ISEP). Preference will be given to students who will study in a third world or developing country for the purpose of fostering international understanding and peace and who demonstrate academic achievement and financial need. (FAFSA)

*The Calvert S. Whitehurst Scholarship is funded by an endowment established by Mr. Robert B. Kendall and augmented by the Whitehurst Scholars Scholarship Foundation. The endowment recognizes the contribution of both Mr. Calvert S. Whitehurst and his son, Professor G. William Whitehurst, former member of the U.S. Congress. The scholarship is awarded to a student with financial need who demonstrates academic potential. (FAFSA)

*The Fritz and Marcy Wildermann Scholarship was established in 1980 by Mr. and Mrs. Robert F. Wildermann to assist a student who meets Old Dominion University’s minimum academic requirements and has financial need. (FAFSA)

The Frieda Young Science and Engineering Prize is awarded annually to a female with the highest grade point average who is a rising junior in either the Frank Batten College of Engineering and Technology or the College of Sciences. Some restrictions on majors do apply within each college and the recipient must be a United States citizen.

Other Financial Aid Resources

The Vice Admiral Samuel L. Gravely Scholarship has been established by the University to honor a member of the Naval community. Two recipients will be selected by the Hampton Roads Naval ROTC from among the College Program Candidates who have met the July 15 application deadline. The recipient must be full-time student with a minimum 3.00 high school grade point average and 1000/22 SAT/ACT test scores.

The Parker Lesley Endowed Fund has been established for students who demonstrate need for special circumstances. Special circumstances are defined as emergency travel, supplies, equipment, etc.

The James Stamos Scholarships in Voice and Piano are made possible by a bequest from Mr. Stamos to assist several students who are majoring in either voice or piano. Information concerning audition requirements is available from the Music Department. Contact Mr. Dennis Zeisler, Chair of the department. (AUDITION) (757) 683-4061

The Student Activities Scholarships in music are awarded to students who participate in one or more Music Department activities including concert choir, band, orchestra, Madrigal Singers and brass choir. Information concerning audition requirements is available from the Music Department. Contact Mr. Dennis Zeisler, Chair of the department. (AUDITION, PARTICI-

The Virginia Junior Academy of Science Scholarship has been established for a graduating high school senior who is affiliated with the Virginia Junior Academy of Science and who is an entering freshman at Old Dominion University. The recipient must be a full-time student whose intended major is in the College of Sciences or Frank Batten College of Engineering and Technology.

Veterans and Dependents Benefits

Information about the administration of education assistance under the Veterans Administration may be obtained from the VA website: www.vba.va.gov. Students wishing to use their VA benefits at Old Dominion University may find further information on the University Registrar’s web page: http://www.odu.edu/webroot/orgs/AP/REG/registrar.nsf/pages/MSS+Home.

Contact Military Student Services staff in the Office of the University Registrar for further assistance by phone: 757 683-3706; by FAX: 757 683-5865; or by email to mss@odu.edu.

Termination of Aid

Failure to remain in good academic standing will result in automatic withdrawal of financial aid by the University. Failure to comply with the conditions of a financial aid award will cause its termination and the return of any unexpended funds as well as repayment, in some cases, of funds already utilized.

Financial Aid Deferment

A deferment is an extension granted by the University which allows a student receiving scholarships, grants, or student loans to delay payment of tuition and fees. Fall semester deferments expire on November 1, Spring semester deferments expire on April 1, and Summer semester deferments expire on August 1. Students who have officially accepted an offer of financial aid by submitting a signed award acceptance letter and demonstrating intent to comply with any and all verification requirements and loan eligibility requirements at least one week prior to the first day of classes for the semester will be granted a deferment automatically.

Some types of aid cannot be deferred, including but not limited to Federal Work Study (which must be earned by employment and for which payment is made directly to the student), Federal PLUS loans, room scholarships, book scholarships, board scholarships, and payments by third parties (contractual arrangements, private scholarships, etc.). NOTE: Federal Direct student loan deferments are calculated at the net value of the loan (less the federally-set loan origination fee). If the amount of the financial aid deferment is less than the student's tuition and other charges for the semester, the student is responsible for paying the excess charges (total bill minus anticipated deferment) by the stated tuition deadline for that semester.

Students are responsible for paying any outstanding balance not covered by the amount of aid deferred. Late charges and other actions may be levied in the event of failure to meet financial obligations. For additional information, contact the Office of Finance.

Regulations governing the administration of student financial aid are subject to unanticipated change. Information provided herein is as accurate as possible on the date of printing.

Financial Aid for Graduate Students

For information on financial aid for graduate students and graduate assistantship guidelines, refer to the section of this catalog on Academic Information for Graduate Students.
### Synopsis of Degree Programs

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<thead>
<tr>
<th>COLLEGE</th>
<th>DEGREE*</th>
<th>MAJORS</th>
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</thead>
<tbody>
<tr>
<td>ARTS AND LETTERS</td>
<td>Bachelor of Arts¹</td>
<td>Art History, Asian Studies, Communication, Criminal Justice</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science¹</td>
<td>Communication, Criminal Justice, Geography, History</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Fine Arts²</td>
<td>Acting, Fine Arts</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Music²</td>
<td>Composition, Performance, Music Education</td>
</tr>
<tr>
<td></td>
<td>Master of Arts</td>
<td>Applied Linguistics, English, History</td>
</tr>
<tr>
<td></td>
<td>Master of Fine Arts</td>
<td>Creative Writing, Visual Studies</td>
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<tr>
<td></td>
<td>Doctor of Philosophy</td>
<td>International Studies</td>
</tr>
<tr>
<td>BUSINESS AND PUBLIC ADMINISTRATION</td>
<td>Bachelor of Arts¹</td>
<td>Economics</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science²</td>
<td>E-Commerce Systems</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Business Administration²</td>
<td>Accounting, Economics, Decision Sciences, Financial Management</td>
</tr>
<tr>
<td></td>
<td>Master of Arts</td>
<td>Economics</td>
</tr>
<tr>
<td></td>
<td>Master of Business Administration</td>
<td>Accounting, E-Commerce Systems</td>
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<td></td>
<td>Master of Public Administration</td>
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<td></td>
<td>Master of Science</td>
<td>Accounting, E-Commerce Systems</td>
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<td>Master of Taxation</td>
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<td></td>
<td>Master of Urban Studies</td>
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<td></td>
<td>Doctor of Philosophy</td>
<td>Business Administration, Public Management and Urban Policy**</td>
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<tr>
<td>EDUCATION</td>
<td>Bachelor of Science¹</td>
<td>Human Services, Speech-Language Pathology and Audiology</td>
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<tr>
<td></td>
<td>Bachelor of Science²</td>
<td>Occupational and Technical Studies, Physical Education, Recreation and Tourism Studies</td>
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<td>Master of Science</td>
<td>Occupational and Technical Studies, Decision Sciences, Educational Leadership</td>
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<td></td>
<td>Education Specialist</td>
<td>Counseling, Educational Leadership</td>
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<td></td>
<td>Doctor of Philosophy</td>
<td>Community College Leadership, Education**</td>
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<tr>
<td>ENGINEERING AND TECHNOLOGY</td>
<td>Bachelor of Science in Engineering Technology²</td>
<td>Aerospace Engineering, Computer Engineering, Civil Engineering, Electrical Engineering, Engineering Mechanics (AE), Experimental Methods, Materials Science and Engineering, Mechanical Engineering, Modeling and Simulation Systems Engineering</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Computer Engineering²</td>
<td>Aerospace Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Mechanics (AE), Environmental Engineering, Mechanical Engineering, Modeling and Simulation Systems Engineering</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Electrical Engineering²</td>
<td>Aerospace Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Mechanics (AE), Environmental Engineering, Mechanical Engineering, Modeling and Simulation Systems Engineering</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Environmental Engineering²</td>
<td>Aerospace Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Mechanics (AE), Environmental Engineering, Mechanical Engineering, Modeling and Simulation Systems Engineering</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Mechanical Engineering²</td>
<td>Aerospace Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Mechanics (AE), Environmental Engineering, Mechanical Engineering, Modeling and Simulation Systems Engineering</td>
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<tr>
<td></td>
<td>Master of Public Health</td>
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<tr>
<td></td>
<td>Master of Science in Nursing²</td>
<td>Community Health, Dental Hygiene</td>
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<tr>
<td></td>
<td>Master of Science in Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Doctor of Philosophy**</td>
<td>Health Services Research</td>
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<tr>
<td></td>
<td>Doctor of Physical Therapy</td>
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</tr>
<tr>
<td>sciences</td>
<td>Bachelor of Science¹</td>
<td>Biochemistry, Biology, Chemistry, Mathematics, Ocean and Earth Science, Physics, Psychology</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Computer Science¹</td>
<td>Biology, Chemistry, Computer Science, Geology***, Oceanography, Physics, Psychology</td>
</tr>
<tr>
<td></td>
<td>Master of Science</td>
<td>Biology, Chemistry, Computational &amp; Applied Mathematics, Computer Science, Geology***, Oceanography, Physics, Psychology</td>
</tr>
<tr>
<td></td>
<td>Doctor of Psychology</td>
<td>Clinical Psychology</td>
</tr>
<tr>
<td>MULTIDISCIPLINARY DOCTORATE</td>
<td>Doctor of Philosophy***</td>
<td>Urban Services—Health Services, Urban Services—Urban Education, Urban Services—Urban Management</td>
</tr>
</tbody>
</table>

* Diplomas will indicate the name of the degree only, not the major
** Planned for initiation in 2005
*** Planned for discontinuation in 2004-05
⁴ Traditional B.A. or B.S. degree for General Education Requirements
⁵ Professional B.A. or B.S. degree for General Education Requirements
Academic Information

This section includes policies specifically for undergraduate students as well as general policies for both graduate and undergraduate students.

Academic Advising for Undergraduate Students
http://www.odu.edu/advising

All degree-status undergraduate students are required to have their courses of study approved prior to each registration. This approval may be from a faculty advisor, professional advisor, TELETECHNET site director, or distance learning representative. However, these individuals have the discretion to give approval for selected students to register for several semesters during one advising contact. Entering freshmen and campus transfer students who are provisionally admitted or undecided on a major or who, through an examination of previous grades and SAT scores, appear to be able to profit from additional advising support are assigned an advisor in Advising Services (1504 Webb Center). While there, they receive assistance with the transition to college, major and career exploration, and the selection of courses. All other freshmen and campus transfer students who are decided on a major are assigned to an academic advisor in their college or department of interest at the beginning of their initial term of enrollment. Campus students who become undecided after initial assignment to an advisor should be referred to the college advising coordinator or the Counseling Center for further counseling and advising assistance. Distant students who are undecided about a major should consult with a site director or campus representative.

Acceptance of a student for advising purposes does not guarantee acceptance into the department as a major. When eligible, students must officially declare the major and be accepted by the department as a major.

Advisors will make every effort to give effective guidance to students in academic matters and to refer students to those qualified to help them in other matters, but the final responsibility for meeting all academic requirements for a selected program rests with the student.

First-semester advising is available at Preview summer orientation for all incoming students. Preview is required for all incoming freshman students and campus freshman-level transfers and is strongly encouraged for all other incoming campus transfer students. Distant students consult with a site director or distance learning representative for first-semester advising.

All students are encouraged to contact their advisor regularly to evaluate their academic progress and discuss career and course options for the following semesters. Students are urged to consult with their academic advisor before making any changes to their approved schedules. Students who find themselves in academic difficulty or on probation should also consult with their academic advisors.

The director of continuance and undergraduate services coordinates the campus advising system through the college advising coordinators, associate deans, the chief departmental advisors (CDAs), and the director of TELETECHNET advising.

The Academic Advising Mission Statement and Goals

In keeping with the University’s mission, the primary purpose of the Old Dominion University academic advising program is to assist students in the development of meaningful educational plans that will be compatible with career aspirations and will empower them to meet their full potential.

Academic Advisor Goals and Teaching Outcomes:

GOAL 1. To help students explore and clarify individual academic and career goals, and to promote understanding of University values as articulated in the University’s mission statement.

GOAL 2. To assist students in developing suitable educational plans and programs of study which promote academic success and develop skills that enable them to pursue life-long learning.

GOAL 3. To help students select appropriate courses and other educational opportunities that meet their academic, career, and personal goals.

GOAL 4. To help students review and evaluate progress toward established educational and career goals and completion of requirements within individual programs of study.

GOAL 5. To develop student awareness and understanding that decision-making in the advising process is based on student responsibility.

GOAL 6. To encourage students to use University support services and related resources as needed (University Catalog, Career Management Center, Counseling Center, Disability Student Services, Writing Tutorial Services, etc.).

GOAL 7. To participate in advisor training sessions, keeping current on University policies and procedures.

Student Goals and Learning Outcomes in the Academic Advising Process:

GOAL 1. To define academic and career goals.

GOAL 2. To take full responsibility to gather the information needed for the successful completion of all graduation requirements, including, but not limited to, course scheduling, program planning, and understanding the academic advising process.

GOAL 3. To seek the academic and career information needed to learn how to meet educational and career goals.

GOAL 4. To read and understand the University’s policies and procedures in relation to meeting University, College, and Departmental graduation requirements.

GOAL 5. To be prepared with accurate information and relevant materials when contacting the academic advisor.

GOAL 6. To consult with the academic advisor on a mutually agreed upon schedule to review course choices, discuss academic and career goals, and assess progress toward degree completion.

Academic Testing

The University Testing Center is part of Academic Skills Programs and is located at the corner of 48th Street and Parker Avenue. Personnel from the Testing Center administer University placement tests, College-Level Examination Program (CLEP) exams, DANTES, the Miller Analogies Test (MAT), and correspondence tests, and coordinate entrance and certification test administrations. For information on testing, please see the web site at http://www.odu.edu/testing.

Academic Skills Testing. All incoming students, including transfer students, will be tested for proficiency in writing. The test results determine the appropriate writing course for each first-year student. A passing score on the Writing Sample Placement Test (WSPT) is a prerequisite to registration for English 110C.

All entering undergraduate students, including transfer students (with or without credit for freshman composition), must pass the Writing Sample Placement Test. Transfer students with credit for English 110C will not lose that credit.

A transfer student with credit for English 110C who has not passed the WSPT may not register for a second semester at the University until a plan to correct writing deficiencies, approved by the coordinator of the Writing Center, is in place. A student who has not passed the WSPT after two semesters as a degree-seeking student at the University will not be permitted to register until the test is passed.

A passing score on the WSPT is a prerequisite to registration for the Exit Examination of Writing Proficiency.

All incoming freshmen students and transfer students without credit for a general education mathematics course are tested for proficiency in mathematics with the Computerized Adaptive Placement Assessment and Support System (COMPASS) placement test. Students with low scores on the COMPASS test are placed in developmental math courses and must pass the developmental courses to enroll in MATH 101M, 102M, 162M, or STAT 130M. Once students have enrolled in developmental or credit math courses, they may not take the COMPASS test except on the recommendation of the director of the Developmental Mathematics Program or the chair of the Department of Mathematics and Statistics.

All students who have studied a foreign language in high school for three or more years and who wish to continue in that same language must take the CEEB Foreign Language Achievement Test. Students with less than three years of foreign language study in high school may take the CEEB Foreign Language Achievement Test if they wish; otherwise, they must begin with the 101F course. This policy does not apply to students who have advanced placement credit. Foreign language courses below the 300 level are not open to native speakers.

Students whose native language is not English and who have satisfied English language proficiency requirements (see the section of this catalog on English Language Proficiency Requirements for Non-Native Speakers of English) are exempt from the foreign language requirements for General Education and the College of Arts and Letters, including exemption from foreign language placement testing.

ACADEMIC INFORMATION 43
Exemptions. Students may satisfy the requirement for the first semester of General Education written communication based on their performance on one of two national examinations. Three hours of credit for English 110C will be earned if the student receives either: (1) a score of 3, 4, or 5 on the Advanced Placement Examination in English Language and Composition; or (2) a score of 50 or higher on the College-Level Examination Program (CLEP) English Composition with Essay Examination.

Students with superior scores on the COMPASS test receive credit for MATH 162M, or both 162M and 163, thus fulfilling the General Education Requirement. Students desiring credit by examination for STAT 130M should apply to the Mathematics and Statistics Department.

Students may be exempt from the General Education Foreign Language requirement (without credit) in one of the following ways: (1) presentation of three high school credits in one foreign language; (2) presentation of two high school credits in each of two foreign languages; or (3) presentation of a score of 500 or above on the CEEB Foreign Language Achievement Test or its equivalent. Credit is granted for scores of 3, 4 and 5 on Advanced Placement (AP) language exams in French, German, Latin and Spanish and literature exams in French and Spanish. No more than nine credits will be awarded if both AP language and literature exams are submitted. Credit is also granted for scores of 4, 5, 6 and 7 on the A2 and B exams in French, German, Latin and Spanish of the International Baccalaureate (IB). Contact the Testing Center for additional information. Students receiving B.A. degrees must demonstrate foreign language proficiency through the 202 or 212 level regardless of high school credits completed.

All placement tests described above are administered by the University Testing Center. Contact information can be found at the center's website at www.odu.edu/testing.

Experiential Learning Credit Options at the Undergraduate Level

Old Dominion University offers a program for assessing college-level knowledge gained through work, life experience and self-study. Students may initiate assessment of prior learning through a variety of assessment tools, including departmental examinations, portfolios, external examinations, performance assessment, or documented training programs, as determined by academic departments. The program, Experiential Learning, facilitates the assessment of such learning. A student may earn a maximum of 60 semester hours at the undergraduate level through experiential learning credit. However, in unusual situations when a student can demonstrate a more extensive knowledge base that would be applicable to a degree program, the student can apply to the Office of Experiential Learning for an exception to the 60-credit-hour maximum. The director will forward suitable requests to the appropriate department. Experiential learning credit may be granted through the following mechanisms:

1. **External Examinations.** Satisfactory scores on the College-Level Examination Program (CLEP), Defense Activity for Non-Traditional Education Support (DANTES), International Baccalaureate (IB), and professional certification examinations evaluated by the American Council of Education (ACE) for college-level credit. It is strongly recommended that students who wish to challenge particular courses do so through CLEP or DANTES examinations for which Old Dominion University awards academic credit. Qualifying scores through the Advanced Placement Examinations Program or Admissions Testing Program of the Educational Testing Service (ETS) are approved by departments. CLEP, DANTES, AP and IB scores received should be reported to the Office of Admissions.

2. **Departmental Examinations.** Upon approval of the appropriate chair and/or dean of the college involved, a student may take a comprehensive examination in an academic course in which he or she can demonstrate proficiency and upon passing the examination receive credit for that course. A request for testing should be made through the Experiential Learning Office, which forwards the request to the chair of the department involved. A course may be tested through departmental examination one time only.

3. **Military/Training.** Military and professional training that is evaluated and recommended for college credit by the American Council on Education (ACE).

4. **Portfolio Development.** Upon approval of the appropriate chair and/or dean of the college involved, a student may develop a portfolio for a course or courses offered by Old Dominion University to gain college-level credit. Portfolios are submitted to the director of experiential learning.

5. **Correspondence Courses.** Correspondence courses completed at an institution accredited by a regional accrediting body such as the Commission on Colleges of the Southern Association of Colleges and Schools, or evaluated by the American Council on Education and recommended for college-level credit. Credit for correspondence courses shall be limited to one-fourth of the total credit hours required for the major and for the baccalaureate degree.

The following regulations for experiential learning credit will apply:

1. All experiential learning options will be granted with credit.

2. Experiential learning credit will be granted upon the written recommendation of the chair of the department or designated faculty assessor having jurisdiction over the courses involved with the chair's approval.

3. The applicability of experiential learning credit toward specific degree program requirements is subject to departmental approval.

4. A student may not fail a course at Old Dominion University and later receive credit for the same course through an experiential learning option.

5. A student may not enroll in a course for credit or audit at Old Dominion University and subsequently seek credit through an experiential learning option.

6. No letter grades will be entered on the student's transcript for experiential learning credit; this credit will be treated in the same way as transfer credit; a “P” (Pass) will be assigned and it will not count in the student’s grade point average.

7. A student must request experiential learning credit as early as possible upon admission to degree status.

8. Experiential learning credit does not count toward the University's residency requirement. A student earning experiential credit must meet the minimum residency requirements of 25 percent of the total number of credits required for the degree at Old Dominion University which shall include 12 residency hours of upper-level courses in the department of the declared major. The student should be aware that some program residency requirements exceed the University minimum residency requirements.

9. A student in a certificate or endorsement area may earn a maximum of six credit hours through experiential learning credit to apply to a certificate, endorsement or teacher licensure program. Experiential learning hours gained in these programs would be applicable to approved degree programs at Old Dominion University. In an approved undergraduate degree program, a student who has previously earned six credit hours of experiential learning credit for a certificate area may be eligible to attempt additional experiential learning credit toward a degree program. The privilege of seeking experiential learning credit is available to both full-time and part-time degree status students. A student should consult with the degree program advisor, site director, distance learning representative, and the Office of Experiential Learning at the beginning of his or her academic career at Old Dominion University to determine how experiential learning may be applicable to the degree. For further information, visit the Experiential Learning web site at http://www.odu.edu/experiential or email xlearn@odu.edu.

For information about experiential learning options for graduate students, please see the section of this Catalog on Experiential Learning Credit Options at the Graduate Level.

Procedures for Portfolio Development

Students wishing to receive academic credit through portfolio development should do the following:

A. Consult the Office of Experiential Learning for guidelines on preparing a portfolio documenting “experiential learning” experiences relating to the course for which credit is sought.

B. Submit the portfolio to the director and include appropriate fees.

C. The director will review the portfolio and forward it to the appropriate department chair for evaluation.

D. The department chair, or a designated faculty assessor(s), will examine the portfolio and determine an award of credit. The decision will be forwarded to the director who will then notify the student and the registrar of the results.

If the conclusion of the portfolio assessment process (see explanation of process at http://www.odu.edu/experiential) results in a negative decision of the award of credit, a student may appeal the decision to the college having the responsibility for the course(s) for which credit is sought. The basis for a portfolio assessment appeal is the student’s charge that the assessment decision was awarded through prejudice or caprice. The burden of proof rests with the student.

Students must initiate appeals in writing within three weeks of receiving the completed portfolio evaluation form. The appeal must be written to the director.
The director will forward the appeal letter to the appropriate department chair. The chair will review the student’s appeal. The chair will get input from the student and from the faculty assessor and may form an independent committee to review the appeal. The chair makes the decision on the validity of the appeal. If the chair concludes there is no cause for complaint, the student has the right to appeal to the dean of the college. If the faculty assessor is the chair, the student may go directly to the dean. The dean will follow the procedures as outlined above. The decision of the dean of the college is final.

Experiential Learning Fees*

Students participating in the program, Experiential Learning, are responsible for assessment fees as follows:

1. External Examination
   - Students are responsible for the testing fees for external examinations such as CLEP and DANTES, and should check with the Testing Center at Old Dominion University for fee information. There is no additional experiential learning assessment fee for the granting of academic credit for external examinations.

2. Departmental Examination
   - The experiential learning assessment fee is equal to 30% of the current approved in-state on-campus rate for undergraduate and graduate courses.

3. Training Evaluation
   - The type of training determines the experiential learning assessment fee for training evaluations. For example, Old Dominion University already articulates military training, and therefore, there is no additional experiential learning assessment fee for the granting of academic credit. The assessment fee for training not previously evaluated by Old Dominion University is equal to 20% of the current approved in-state on-campus rate for undergraduate and graduate courses. For information about training programs that have been evaluated by Old Dominion University, see the Experiential Learning web site at [http://www.odu.edu/experiential](http://www.odu.edu/experiential).

4. Portfolio
   - A one-time workshop materials fee.
   - Portfolio assessment fee equal to 50% of the current approved in-state on-campus rate for undergraduate and graduate courses.

Fees are based on the credit hours attempted and are not refundable if the student does not receive credit as a result of the evaluation. There is no appeal of the fee charge. The fees must be paid at the time the student submits the completed portfolio, departmental examination or training documentation for evaluation.

For more information contact xlearn@odu.edu, call 683-6388, or visit the web site at [http://www.odu.edu/experiential](http://www.odu.edu/experiential).

Career Advantage Program and Guaranteed Practicum

Old Dominion University is the only four-year, doctoral granting institution in the United States to guarantee a practical, faculty-directed, for-credit experience related to a student’s major. The Career Advantage Program (CAP) was introduced in 1995 and is administered by the Career Management Center (CMC) in partnership with the academic colleges.

CAP is a series of career-related events and services designed to include a practical work experience, which may take the form of an internship, cooperative education experience or a class containing a real-world, hands-on project. Classes meeting the specifications for the guaranteed practicum are clearly noted in the Courses of Instruction section of this catalog as “(Qualifies as a CAP Experience).”

Services provided by the CMC under CAP include career counseling, job fairs, an on-campus recruiting program, professional seminars and job search assistance, special career events, student employment program, electronic job postings through eRecruiting, and a virtual career center. Services are available in person, on-line or from a distance through the Cyber Career Center.

Community College Transfer Programs

Old Dominion University offers a number of programs articulated with area community colleges. These programs begin with two years of course work at the community college and are completed at Old Dominion University with a baccalaureate degree. They are designed to minimize loss of credit due to transfer and to take maximum advantage of the lower tuition at the community colleges. Further information can be obtained from the community colleges or at www.odu.edu/advising.

Interinstitutional Study Program with Norfolk State University

Old Dominion University students have the opportunity to elect courses at Norfolk State University through a student exchange program agreed to by the two institutions.

The registrar of each institution will register a student for courses at the other institution if the student presents a properly signed form listing the course or courses to be taken at the other institution. The student exchange will be honored both in the regular session and in the summer session and applies to both undergraduate and graduate students. All credits earned by students will be considered resident credit at the home institution for degree purposes. (Courses taken at NSU under this policy will be considered the same as Old Dominion University courses; all other courses are subject to transfer credit policy limitations.)

Regular bus service is provided between campuses but is not available for evening classes.

Virginia Tidewater Consortium Exchange Program

Old Dominion University students may also take undergraduate courses at any of the following Consortium institutions: Christopher Newport University (Newport News), Eastern Shore Community College (Melfa); Hampton University (Hampton); Norfolk State University; Paul D. Camp Community College (Franklin); Thomas Nelson Community College (Hampton); Tidewater Community College (all campuses); and Virginia Wesleyan College (Norfolk).

Cross-registration is subject to the following regulations:

1. Cross-registration is limited to declared majors with cumulative grade point averages of 2.00 or better.
2. Cross-registration credit is limited to 30 semester hours.
3. Cross-registration courses may be used only as electives in the degree program. The department chair may make exceptions in the case of departmental requirements.
4. Cross-registration is limited to courses not available to students at the home institution during the current or subsequent semester.

For further information, contact the Office of the Registrar, Alfred B. Rollins Jr. Hall.

Academic Common Market

Old Dominion University, through a number of its undergraduate and graduate programs, participates in the Southern Regional Education Board’s Academic Common Market. Eligible residents of participating states may enroll (following admission to degree status) as Academic Common Market students at in-state tuition rates. Evidence of legal domicile must be presented to the Office of the Registrar, Rollins Hall. Information on available programs may be obtained from the Office of Academic Affairs.

Writing Proficiency Program and Policies

[www.odu.edu/writingcenter](http://www.odu.edu/writingcenter)

In response to a growing concern for the quality of students’ writing, a comprehensive writing program was initiated at Old Dominion University in 1978. The program is implemented through the Writing Center as well as by all faculty members, since the University recognizes that an effective writing program is an ongoing process that forms an integral part of the student’s overall academic preparation. The Writing Center offers workshops for campus students who need to improve their writing skills. The Writing Center also offers videotapes and materials for check-out by distance learners when requested.

Undergraduate Writing Program Requirements

Entrance Examination—Writing Sample Placement Test (WSPT). All incoming students, including transfer, will be tested for proficiency in writing. The test results determine the appropriate writing course for placement.
of each first-year student. A passing score on the Writing Sample Placement Test (WSPT) is a prerequisite to registration by campus students for English 110C and English 126.

All entering undergraduate students, including transfer students (with or without credit for freshman composition), must pass the Writing Sample Placement Test. Transfer students with credit for English 110C will not lose that credit.

A transfer student with credit for English 110C who has not passed the WSPT may not register for a second semester at the University until a plan to correct writing deficiencies, approved by the coordinator of the Writing Center, is in place. A transfer student who has not passed the WSPT after two semesters as a degree-seeking student at the University will not be permitted to register until the test is passed.

A passing score on the WSPT is a prerequisite to registration for the Exit Examination of Writing Proficiency. Exit Examination of Writing Proficiency. All students enrolled in undergraduate degree programs, including students acquiring a second baccalaureate degree, must pass the University's Exit Examination of Writing Proficiency. The test is administered under the auspices of the exit exam coordinator, who establishes when the test will be given throughout the year.

Students are strongly advised to take the exam after 58 credit hours earned. Therefore, if they need assistance with improving their writing skills, they can be advised of services available to help them attain writing proficiency prior to the anticipated date of graduation. A fact sheet on the Exit Examination of Writing Proficiency is available at the Writing Center, all academic department offices, and online at www.odu.edu/writingcenter. Registration sessions and exam dates are listed in the Guide to Enrollment each semester and online at www.odu.edu/testing.

Distance Learners. Students may contact their site directors for information on the WSPT and the Exit Examination. For those students not associated with an ODU site, please contact the Testing Center website at www.odu.edu/testing or the Office of Distance Learning at 1-800-968-2638.

Attendance Policy
Because the class period is important and discussions cannot be reproduced, absences cannot be made up. Excessive absences can have a negative effect on the student's learning and performance.

A student who must miss a class is expected to have the initiative necessary to cover properly the material missed. The student must meet all course deadlines and be present for all quizzes, tests, and examinations.

An attendance policy that is consistent with departmental policy or guidelines will be established for each class by the instructor. Syllabus information will include a statement of the attendance policy for the course and the effect, if any, of nonattendance on grades.

Procedures. The Student Health Service should be notified when a faculty member or department becomes aware that a student is going to be absent from classes more than one week because of an illness.

In the event the student is too ill to contact his or her instructors and does not have someone who can do so, Student Health Services will notify the student's course instructors of the absence on his or her behalf.

Submission of Written Work To More Than One Class
In general, it is not acceptable for a piece of work such as a term paper to be submitted to more than one class for credit. In cases where submission of the same paper is appropriate, prior approval must always be obtained.

An example of a situation in which the same paper might appropriately be submitted would be one in which a student was enrolled in two classes, in both of which a given research topic was not only of interest to the student but was completely appropriate to both classes. In such circumstances, the student would approach the instructors of the two classes and obtain approval to submit the same term paper to both classes, based on prior agreement concerning the depth of the study, amount of material covered, and the length of the paper to be submitted (which should be longer than a paper submitted to one class).

System of Grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
<td>Superior</td>
<td>Excellent</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
<td>Superior</td>
<td>Excellent</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
<td>Satisfactory</td>
<td>Poor</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Satisfactory</td>
<td>Poor</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
<td>Passing</td>
<td>Poor</td>
</tr>
<tr>
<td>D+</td>
<td>1.30</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>D-</td>
<td>0.70</td>
<td>Passing</td>
<td>Not Used</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Failing</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>WF</td>
<td>0.00</td>
<td>Unofficial Withdrawal</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>None</td>
<td>Pass</td>
<td>See below</td>
</tr>
<tr>
<td>F(P/F) None</td>
<td>Fail</td>
<td>See below</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>None</td>
<td>Audit</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>None</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>None</td>
<td>Incomplete not Subject to Time Limit</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>None</td>
<td>Official Withdrawal</td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>None</td>
<td>Progress but not Proficiency</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>None</td>
<td>No Grade Reported</td>
<td></td>
</tr>
</tbody>
</table>

The grade of W indicates withdrawal from a course only under those conditions described in the sections entitled Class Schedule Change Procedures and Grading Policy and Withdrawal From Classes.

A grade of I indicates assigned work yet to be completed in a given course or absence from the final examination and is assigned only upon instructor approval of a student request. The I grade may be given only in exceptional circumstances beyond the student’s control, such as illness, and only after 80% of the time allocated for the course has been completed. In these cases it is the responsibility of the student to approach the instructor to request an I grade and to provide documentation, including a written statement of when the work will be completed, to support the request. The authority to award an I grade rests with the instructor whose decision is final. Students whose requests for I grades are approved must not re-register for the class until the I grade has been resolved. The I grade becomes an F if not removed through the last day of classes of the following term (excluding the exam period) according to the following schedule: I grades from the fall semester become F's if not removed by the last day of classes of the spring semester; I grades from the spring semester and the summer session become F's if not removed by the last day of classes of the fall semester. An I grade may be changed to a W only in very unusual circumstances and when the student’s situation has changed since the I grade was awarded. In these cases, the request for a change to a W must be in writing, documented, and approved by the instructor, department chair and dean. Students will not be allowed to graduate until all grades of I have been resolved.

A grade of II indicates incomplete work not subject to the time limits described above for I grades. The II grade can be used only in those courses directly related to the research for and preparation of the graduate thesis/dissertation.

The use of plus and minus grades is at the discretion of the instructor. A grade of Z indicates that no grade has been reported by the instructor and will convert to a grade of F if not removed through the last day of classes of the following term (excluding the exam period) according to the following schedule. Z grades from the fall semester become F's if not removed by the last day of classes of the spring semester; Z grades from the spring semester and the summer session become F's if not removed by the last day of classes of the fall semester. Students will not be allowed to graduate until all grades of Z have been resolved.

The grade point average is calculated by dividing the accumulated number of grade points earned by the accumulated number of credit hours attempted. Grades of F and WF and repeats are included, but official withdrawals, audits, and grades on noncredit courses, nondegree credit courses, and pass/fail degree courses are not included.

For graduation, an undergraduate student must have a minimum grade average of C (grade point average of 2.00) in all courses taken and a grade point average of at least 2.00 in the major except for those programs requiring a grade point average above a 2.00.

A 3.00 average will be required for the awarding of a graduate degree or certificate. A student whose average falls below 3.00 following six or more graduate hours attempted shall be placed on probation or suspended in accordance with the continuiance regulations for graduate students.
Grades in courses accepted for transfer credit are not counted in the computation of grade point averages.

Grades are available to students through the secure website or interactive voice response system. Grades are mailed to students only if a written request is submitted to the Office of the Registrar.

Academic Information Report: The University believes that regular assessment of students and feedback to them is essential to effective teaching and learning. Therefore, faculty members will provide students with evaluation of their progress in a course prior to midterm. Faculty teaching 100- and 200-level undergraduate courses will provide specific feedback regarding progress in the course. Feedback may be accomplished by returning substantial graded assignments or by posting an interim grade via Leo Online where reasonable and appropriate. Quarterly progress will be submitted by the end of the fourth week of classes in the fall and spring semesters, and the equivalent time frame in the summer sessions. Providing timely information to students on graded work makes students aware of their performance so they can determine whether to seek additional help from the faculty member, tutorial services when available, their academic advisor and/or withdraw from the course prior to the established deadline for withdrawal.

Grade Forgiveness

Under the Grade Forgiveness Policy, undergraduate students seeking a baccalaureate degree may improve their grade point average (GPA) by repeating a course taken previously. The repeated course must be the same course as taken previously and must be completed through Old Dominion University. The registrar automatically applies the Grade Forgiveness Policy to all eligible course repeats at the end of each semester. The Grade Forgiveness Policy became effective for the Fall 1997 semester. Courses repeated prior to the Fall 1997 semester are not eligible for grade forgiveness. Grade forgiveness will not be processed after a student graduates.

Grade Forgiveness Policy

Undergraduate students are subject to the following conditions and requirements.

1. Students who receive a grade of C– or lower (grades of C-, D+, D, D-, F, and WF) may repeat the course to improve the overall grade point average. A course may be repeated once with grade forgiveness applied. The Grade Forgiveness Policy will not be applied to courses for which a grade of C or higher was ever awarded. Additional courses that are not eligible for grade forgiveness include courses taken under the pass/fail option, courses taken under the audit option, courses for which a grade of W was the only grade awarded, or courses that currently are incomplete (I grade).

2. The Grade Forgiveness Policy applies only to the repeat of the same course (same number, same title, same credit value, and, for topics courses, same subtitle and same credit value). Exceptions will be made where the course number or title is the only change and the change is documented in the Catalog and approved for grade forgiveness by the assistant vice president for undergraduate affairs.

3. The Grade Forgiveness Policy will not be extended to courses originally taken elsewhere, including Norfolk State University and institutions with which Old Dominion University has consortia arrangements. In addition, courses repeated at other institutions will not be used to forgive Old Dominion University courses.

4. Students may not be able to repeat a course in the following cases: enrollment is restricted, the student no longer qualifies for admission to a course, the prerequisites are enforced, major or sequence requirements have been changed, or the curriculum has been revised. In such cases the decision of the assistant vice president for undergraduate affairs in consultation with the appropriate academic department will prevail. Exceptions are granted only in rare instances. In any course or program where enrollment demand exceeds that the resources to offer sufficient openings or sections to meet that demand, the academic unit may give registration priority to students taking the course for the first time.

5. Students may elect to use both grade forgiveness and the Adjusted Resident Credit (ARC) policy. However, students cannot use grade forgiveness for individual courses for which adjusted resident credit already has been applied.

6. Students who have graduated may not use the provisions of this policy to repeat for forgiveness a course taken prior to the date of graduation. Once a bachelor's degree has been awarded, a student may not raise the undergraduate grade point average by repeating a course taken as an undergraduate.

7. Under this policy, only the second grade earned, whether higher or lower than the original grade, will be calculated in the grade point average for the purposes of continuance, graduation, etc. Any repeats of a course after grade forgiveness has been applied will be averaged with other course work. All grades will remain on the student's permanent record, but the record of a previous grade in the course will be marked to indicate that the course has been repeated. Academic suspensions will not be removed from student transcripts and Dean's List status will not be added after grade forgiveness is applied to the student record in cases where the grade point average is improved sufficiently to change the student's status for the semester in question.

8. An enhanced grade point average using the Grade Forgiveness Policy does not determine eligibility for graduation with honors. To determine eligibility for graduation with honors, the student's complete record, including grades (grade points and hours) for courses that have been forgiven, will be evaluated to calculate the final grade point average. If the student's overall average is sufficient, graduation with honors will be posted to the student's record.

9. In cases where the student repeats a course in which a grade of C or better was awarded, all grades received, including the original grade, and all hours earned will be used for calculation of grade point averages. The course will count only one time toward graduation certification and degree completion.

10. Students receiving financial aid should consult with their Financial Aid representative to determine how use of this policy may affect financial aid status.

11. Other schools, including professional and graduate schools, may not honor this policy on repetition of courses with forgiveness.

12. Veterans should consult the Office of Military Student Services to determine the impact of course repetition on their eligibility for benefits.

Grade Appeals

Grade Appeal Procedure

1. The purpose of the grade appeal procedure is to serve the needs of graduate and undergraduate students who believe that they were unjustly awarded a final course grade by a faculty member through prejudice or caprice. This policy applies to the final grade for the award of academic credit and does not apply to graduate and undergraduate examinations that are administered as part of the degree progression and certification processes (such as comprehensive examinations and candidacy examinations at the graduate level). The basis for a grade appeal is the student's charge that the final grade was awarded through prejudice or caprice. The burden of proof rests with the student.

2. Students must initiate the appeal within the same time limitations that exist for removing a grade of I from a record (see the policy on System of Grading).

3. The student will consult with the instructor first for an explanation of the method of evaluation and to determine whether an error has been made.

4. If the student is not satisfied with the results of the conference with the instructor and the student wishes to pursue the appeal, the case must be presented in writing for a first-level appeal. The student's grade appeal letter should include (1) state specific reasons and give examples of faculty prejudice or caprice, (2) show that prejudice or caprice affected the awarding of the final course grade, and (3) be presented as a complete package and include all supporting documentation.

A. The student will submit the grade appeal letter to the chair of the appropriate department.

B. If the instructor is the chair, the student will submit the grade appeal letter to the dean.

C. If the instructor is the dean, the student will submit the grade appeal letter to the chair of the department in which the dean is teaching.

5. If it is concluded at the first-level appeal that there is no cause for complaint, the person to whom the appeal was submitted will notify the student in writing that the appeal is denied. The student may submit a second-level appeal as detailed below.

6. If the chair concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the dean. The student should request in writing that the chair forward the grade appeal package to the dean to initiate the second-level appeal.

B. If the instructor is the chair and the student has appealed directly
to the dean and the dean concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the provost and vice president for academic affairs. The student should request in writing that the dean forward the grade appeal package to the provost and vice president for academic affairs to initiate the second-level appeal.

C. If the instructor is the dean and the student has appealed to the chair of the department in which the dean is teaching the course and the chair has concluded in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the provost and vice president for academic affairs. The student should request in writing that the chair forward the grade appeal package to the provost and vice president for academic affairs to initiate the second-level appeal.

6. If the person to whom the second-level appeal is submitted concludes that there is no cause for complaint, the student will be notified in writing that the grade appeal process is complete and no further appeal is allowed.

7. If during the first- or second-level appeal process it is concluded that there may be valid cause for the complaint, the person to whom the appeal has been submitted should consult with the instructor and student and attempt to mediate the dispute. Among the alternatives available for resolution of the case will be the assignment of the grade of P if the chair, the instructor, and the student express their agreement in writing. If mediation fails, the person to whom the appeal has been submitted will offer to form a committee to carry out an independent investigation and a hearing will be held.

A. The person to whom the appeal has been submitted will appoint a committee from the department or college. The committee will consist of two faculty and one student. Both the instructor and the student will have the right to challenge, for valid cause, any or all of the members of the committee, and in that event replacements will be appointed and no further challenge will be permitted. The committee will hear the instructor, the student, and other pertinent witnesses. The hearing will be taped, but the tapes will be erased after one year following disposition of the case. The committee, after careful deliberation, will make its recommendation to the person to whom the appeal was submitted, who will relay the information to the instructor and the student.

B. If the committee finds that there is no cause for complaint, the grade appeal process is complete and no further appeal on the merits of the case is allowed. Only one hearing on the merits of the case is allowed.

C. If the committee finds on behalf of the student and recommends a change of grade and the instructor refuses to change the grade, then the person to whom the appeal was submitted will consult with the student about the advisability of accepting a P grade. Should the student consent to acceptance of a P grade, the person to whom the appeal was submitted is authorized to change the contested grade and will so inform the registrar. A P grade established under this policy will be given irrespective of the University policy on hours permitted for P grades or restrictions on when a P grade is permissible and will not prevent progression in the degree program or courses for which this course is a prerequisite.

D. If either the instructor or the student believes that the established procedures for the appeal of grades have not been followed, an appeal for a rehearing may be to the person identified as the second level of appeal. The only basis for appeal will be the failure to have been provided due process as prescribed by the policy.

Guidelines and Procedures for Grade Adjustments for Nonacademic Reasons

1. Errors in the assignment of grades (e.g., a C received instead of an A) must be brought to the attention of the faculty member immediately upon receipt of the grade report. If confirmed, the instructor will submit a grade change through the chair to the registrar.

2. Administrative errors (e.g., drop/add submitted but not processed) should be brought to the attention of the registrar immediately upon receipt of the grade report.

3. Other nonacademic reasons for adjustment that may be reviewed are as follows:

   a. Change of an I to a W only if the I grade was assigned unilaterally by the instructor; a research project is irretrievably destroyed; or the student is incapacitated to the point where course work cannot be completed within a reasonable time. If approved, the grade carried at the time the I was assigned will determine the nature of the change in accordance with the withdrawal policy in effect for the term in question.

   b. Extension of the I time limitation normally will not be approved except for reasons beyond the student’s control and only if the supervising faculty member is available and willing to supervise the work beyond the normal time limit. Students should make the request of the instructor, who should submit approval, via the chair, to the registrar in order to retain the I. The letter should designate the expiration date of the extension.

   Except where noted otherwise, all requests for review in section 3 must be submitted in writing to the registrar, normally within the same time limits that exist for removing I grades. The requests should provide full and complete details. In no case will a change be made without supporting evidence and approval of the instructor as determined from remarks on the grade sheet or direct statement. All inquiries of the faculty must be made by the office of the dean rather than the student.

4. All requests for changes will be reviewed as expeditiously as possible. Students should realize that the process can be lengthy in certain cases, and are therefore advised to submit requests as soon as possible after the end of the term in question.

5. Changes to a record will be approved only if all financial responsibilities to the University have been met by the student.

Audit Status

The audit grading status is available for students who would like to enroll in a course for the knowledge gained or personal satisfaction, not for academic credit. Any course that is elected to be carried as an audit will be subject to the normal fees and regulations of the University. Regular attendance is expected, but neither tests nor examinations are required. No grade will be recorded, except that an instructor may assign a grade of W to a student who misses an appreciable portion of the classes. The student’s record will be marked “audit” by the course so elected. A student may not audit a course and subsequently seek advanced placement credit for the same course. A student may audit a course and register for the same course for credit in a subsequent semester. Any course elected for audit and subsequently changed to that of credit status after the end of the “add” registration period. Registration for the audit option must be selected by the end of the drop/add period in the given semester. Students receiving financial aid should be aware that registering for audit status may affect their financial aid eligibility. Selection of the audit status is accomplished through the normal registration procedures.

Academic Credit For Extracurricular Activities

Extracurricular activities may be approved for credit for undergraduate students by academic departments, based on objectives, criteria, and evaluative procedures formally determined by the department and the student before the semester in which the activity is to take place. Such credit is subject to the review of the provost and vice president for academic affairs.

Guidelines

The following guidelines regarding the administration of the policy on granting credit for extracurricular activities will provide universitywide standards on this matter. Within these standards individual departments may establish credit activities appropriate to their particular discipline.

1. A department may grant credit for extracurricular activities that fall within the academic interests of the department.

2. The extracurricular activity for which credit is to be granted must have demonstrable academic value.

3. A student desiring academic credit for extracurricular activity shall, prior to the semester the credit is to be granted, formally petition the chair of the department, describing the proposed project in detail and justifying its academic value.

4. If the department chair considers that a petition has merit, the chair will refer the student to a faculty member with expertise in that area. The student and the proposed faculty supervisor will refine the student’s project. The faculty member will then make a recommendation to the chair concerning the validity of the project, the amount of credit to be awarded, and the grading system to be employed (pass/fail or letter grade). The recommended plan will include a description of the nature of the supervision and methods of evaluation to be used.

5. A recommended project approved by the chair will then be sent to
Courses considered to be duplicate are so designated in the course designated by the department as duplicate may apply only one toward a degree.

in which grades below C were earned.

Forgiveness Policy in this Catalog for information about repeating courses required for the degree. Grades earned in both the original course (if C or for credit under these conditions will be applicable toward the total hours

5. A student receiving a P will receive credit for the hours, but will not receive grade points, and the hours will not be counted in the computation of the grade point average. A student receiving an F will not receive credit for the course and there will be no penalty, although the failure will appear on his or her transcript.

6. A student electing the pass/fail option for a particular course cannot change his or her registration and elect to take the course for grade point credit after the end of the “add” period. Similarly, courses cannot be elected as pass/fail after the end of the “add” period.

7. All prerequisites must be met for any course taken under the pass/fail option.

Repeating Courses

Normally, undergraduate students may not repeat courses in which they have previously earned a C or better or in which they have received transfer credit. Exceptions to this should be made by the department chair or, in the case of graduate students, by the dean of the college in which the graduate student is enrolled, and should be allowed only under the following conditions:

1. A student has a long delay (usually more than five years) between an introductory course (or the first half of a two-course sequence) and subsequent study, so that repeating the course is advisable for future success in the field.

2. A department requires that grades higher than C be earned in particular courses and requires a cumulative grade point average greater than 2.00 and stipulates that students who earn less than the desired grades or grade point average retake the courses.

None of the credit hours earned in courses that have been repeated for credit under these conditions will be applicable toward the total hours required for the degree. Grades earned in both the original course (if C or above) and the repeated course will, however, be used in the calculation of the cumulative grade point average.

The Grade Forgiveness Policy does not apply when courses are repeated in which a grade of C or higher was earned originally nor does the Grade Forgiveness Policy apply to transfer courses. Please refer to the Grade Forgiveness Policy in this Catalog for information about repeating courses in which grades below C were earned.

Duplicate Courses

An undergraduate student who has taken two courses that are designated by the department as duplicate may apply only one toward a degree. Courses considered to be duplicate are so designated in the course de-

Declarations found elsewhere in this catalog. For example, a student receiving credit for Biological Sciences 115N cannot receive credit for Biological Sciences 108N.

Declaration or Change of Major, Minor, or Cluster for Undergraduate Students

Upon entrance to the University, students are assigned either to an advisor in Advising Services or to an advisor in their college or department of interest. Distant students will utilize the site director or distance learning representative as their main advisor, with a college advisor on campus assigned as the final authority. Acceptance of a student for advising purposes does not guarantee acceptance into the department as a major. Acceptance of a student as a major in a program cannot occur until all requirements for acceptance have been met. These requirements vary depending upon the major. Specific inquiries concerning requirements should be made to the academic college, school or department involved, or the site director or distance learning representative. In all cases a student must officially complete English 110C before declaring a major.

A student must be accepted as a major in an academic program before the student may become a degree candidate or apply for graduation. Students cannot receive a degree in an academic program unless they have met all requirements for acceptance and have been accepted into that academic program. Nondegree students may not declare majors until admitted to degree status. Students with additional requirements upon entrance to the University, due to lower than average SAT scores or previous grades, must complete these requirements prior to declaration of a major.

Students must contact the department of the intended major or their site director or distance learning representative to formally declare a major. Upon meeting the University, college, and departmental/school requirements for declaring the major and/or minor, the academic advisor, site director, or distance learning representative in the interest area will notify the Office of the Registrar or Distance Learning to officially declare the major and/or minor or upper-division general education cluster.

Registration

There are several registration options available to students: registration via the world wide web at www.leonline.odu.edu, on campus preregistration, on-campus continuous registration, and off-campus registration. Eligible students are encouraged to preregister since they will have a better chance of obtaining satisfactory schedules of classes. Preregistration is reserved for currently enrolled degree-seeking students. Open registration begins immediately following the preregistration period. Refer to the Guide to Enrollment published before each term for details concerning eligibility, procedures, requirements, and dates. The course schedule is available at www.leonline.odu.edu by March 1 for summer and fall semester classes and by October 1 for spring semester classes.

Summer Sessions

Old Dominion University offers a 14-week summer program, including two four-week sessions, two six-week sessions, two seven-week sessions, and one 14-week session, starting in the middle of May and ending in the middle of August. The exact dates are listed in the Registration Information and Schedule of Classes. More than 1,000 graduate and undergraduate classes are offered on campus and off campus during the summer months.

Normal Course Load for Undergraduate Students

The University considers the carrying of 12 or more semester hours to be full time for undergraduate students; 15 hours is considered a normal course load; and no student may take more than 18 hours without written permission of the student’s advisor. Otherwise, the actual course load is entirely the prerogative of the student.

During the summer session, an undergraduate student is considered to be full time if he or she is enrolled in nine hours. A student may not enroll in more than nine hours in a six- or seven-week session or four hours in a four-week session. No student may enroll in more than 15 hours during the summer sessions without written permission of his or her advisor.
**Course Numbering**

Courses in which the leading number is zero, e.g., 050, are nondegree credit courses primarily in developmental studies.

Courses numbered 100 are primarily for freshmen, 200 for sophomores, 300 for juniors, and 400 for seniors. All 300- and 400-level courses require junior standing or permission of the instructor.

Courses at the 500, 600, 700, and 800 levels are exclusively for graduate credit. Courses at the 500 level are available for graduate credit only and correspond to undergraduate 400-level courses. However, a different grading scale is used for 500-level registrants; additional and higher quality work is required in 500-level courses. Courses at the 500, 600, and 700 levels are for master's and nondegree graduate students. Courses at the 800 level are used for advanced graduate students only, that is, degree students in a doctoral or Ed.S. program.

General Education courses are designated by the fourth digit in the course number. At the lower division, the following designations are used: for skills courses, C=Composition, D=Computing, F=Foreign Language, M=Mathematics and R=Oral Communication; for Perspectives courses, A=Fine and Performing Arts, H=History, K=Natural Science (beyond the eight-credit “N” sequence), L=Literature, P=Philosophy, N=Natural Science, S=Social Science, and T=Technology. Writing intensive courses are designated by a W in the fourth digit.

Course numbers 195, 196, 295, 296, 395, 396, 495, 496, 595, 596, 695, 696, 795, 796, 895, and 896 are to be used to designate topics courses taught as a class. These courses should be shown in the schedule book with a section designation and room assignment. The particular topic for that semester should also be listed. Where a particular topic is offered more than two or three times, it should be approved as a regular course offering and given its own course number.

Course numbers 397, 398, 497, 498, 597, 598, 697, and 698 are to be used to designate courses involving individual or tutorial study within a discipline. The individually arranged courses will require prior approval by the department chair and/or instructor, and will be shown in the schedule book with the designation “TBA.”

Course numbers 367, 667, and 867 should be used for cooperative education at the undergraduate and graduate levels, 368, 668, and 868 should be used for internships at the respective levels, and 369, 669, and 869 should be used for practicum courses at the respective levels. Course numbers 377 and 378 are reserved for departments interested in granting credit for extracurricular activities. Course numbers 126, 127, 128, 226, 227, 228, 387, 388, 487, and 488 are reserved for departments interested in offering honors courses.

Course numbers 698 and 898 are reserved for research for the thesis or dissertation, 699 is reserved for thesis courses and 899 is reserved for dissertation courses.

Once a course number has been deactivated it may not be reused for a different course for a period of six academic years.

**Withdrawal From Classes or From the University**

**Class Schedule Changes and Drop/Add Procedure**

Students may drop classes within the first seven calendar days after classes have started and may add classes up to 11 calendar days after classes have started (for full semester classes). Once registered, a student must drop or add classes via the secure website at www.leoonline.odu.edu or submit a completed drop/add form to the Office of the University Registrar or to the distance site office (for TELETECHNET students). The date the form is received in the Office of the University Registrar or to the distance site office will be used to determine the withdrawal status of the student.

**Policy for Dropping and Withdrawing From Classes**

**Dropping Classes.** Prior to the start of and during the first seven calendar days of the semester, a student may drop a course; this means no grade will be assigned and no reference entered on the student's permanent academic record. Please refer to the Guide to Enrollment for the dates to drop classes in nonsemester courses.

**Withdrawal from Classes.** After the first seven calendar days of the semester, a student may withdraw from any course through the end of the eighth week of a regular semester. Please refer to the Guide to Enrollment for the dates to withdraw from classes in nonsemester courses. A grade of W will be assigned during this period. Students who withdraw through the end of the eighth week are encouraged to contact their instructor, advisor, site director, or distance learning representative, and financial aid counselor to discuss the implications of withdrawing.

Withdrawal from a course after the eighth week of a regular session (or its equivalent in a nonsemester course) is usually not permitted. However, in the event of an illness or other severe hardship beyond the student's control, the student should submit, no later than the last day of classes, a written petition for permission to withdraw to the instructor and the chair of the department offering the course. If permission is granted by both, a grade of W will be recorded. If permission is not granted by both, the student will not be allowed to withdraw from the course. Any appeal of decisions should be brought to the dean of the college offering the course. A student who stops attending classes without withdrawing from the course will receive a grade of WF, except if the student's performance has been an F, in which case a grade of F will be assigned. The grade of WF will carry no grade points, and will be computed in the grade point average as a grade of F.

**Drop and Withdrawal Deadlines.** Specific deadline dates for dropping and withdrawing from classes are found in the Guide to Enrollment that is published by the Office of the Registrar and available on the University's website.

**Administrative Withdrawal From the University**

During the course of any semester, there will be situations, such as severe illness, death in the immediate family, or disciplinary actions, which will require that the University initiate an administrative withdrawal to assist a student or to implement a University-imposed sanction. The following procedures will be used:

1. The request for withdrawal is initiated either by the student because of an extenuating personal situation or by the University because of a disciplinary situation.
2. This action will normally be handled by the vice president for student services or designee or the Health Center. If the student initiates the withdrawal, the associate vice president's office or the Health Center will determine what verification is necessary and document the situation.
3. A request will be submitted to the Office of the Registrar to withdraw the student from all classes.
4. The student's instructors will be notified. If the student is withdrawing after the last day to withdraw from classes without penalty, part of this notification will include the opportunity for the faculty member to raise objection if the student's classroom performance is such that a withdrawal (W) would not be appropriate.
5. If a faculty member objects, the faculty member will inform the registrar and the student will receive an “W” in the class.
6. The request for withdrawal must be initiated by the student not later than the end of the semester following the term for which administrative withdrawal is sought.

**Transcripts**

Transcripts are provided by the Office of the University Registrar and are issued only upon the written request of the student. They should be requested at least five business days before the date needed. Students picking up transcripts must present valid identification. No transcripts will be issued if the student has an outstanding debt at the University. All grades, disciplinary and academic suspension actions, degrees received, and degree honors are included on the transcript.

An official transcript carries the University Seal and an authorized signature. Official transcripts are usually mailed directly to educational institutions, employers, etc. Any transcript mailed to or given directly to a student will be marked, "Issued to Student." Partial transcripts are not issued; each transcript must include the student's complete record at Old Dominion University.
A transcript of work completed at any high school or at any college other than Old Dominion University must be obtained directly from that institution.

There is a change of $5.00 for each transcript issued. Unofficial advising transcripts may be accessed by the student's advisor of record through www.leonline.odu.edu.

Regulations for Continuance: Undergraduate Students

Notification of Academic Status

The University makes every reasonable effort to notify undergraduate students of their academic status. A first class letter is mailed to each undergraduate student placed on probation and suspension. Since communication by mail may be delayed or misdirected, it is the responsibility of every student to determine his or her academic status; undergraduate students may check their grade point averages through the Web at http://www.leonline.odu.edu. Non-receipt of a letter by a suspended student will not be considered grounds for claiming eligibility to enroll for a subsequent semester.

Undergraduate Continuance Regulations

At the end of each semester—fall, spring, and summer—the director of academic continuance reviews the records of all students who do not maintain a 2.00 grade point average (GPA). It is strongly recommended that all students with a cumulative GPA below 2.00 be limited to a semester enrollment of no more than four courses.

1. PROBATION. All undergraduate students receive one semester (fall, spring, summer) of probation in the next enrolled semester after the cumulative grade point average drops below 2.00. After the one-semester probation, a student remains on probation if one of the following conditions is met:
   * a 2.50 semester grade point average for courses taken each semester until attaining good standing (2.00) OR
   * a cumulative grade point average of 1.50-1.99 with 0-25 credit hours earned (including transfer credit hours);
   * a cumulative grade point average of 1.70-1.99 with 26-57 credit hours earned (including transfer credit hours);
   * a cumulative grade point average of 1.80-1.99 with 58-89 credit hours earned (including transfer credit hours);
   * a cumulative grade point average of 1.90-1.99 with 90 or more credit hours earned (including transfer credit hours).

NOTE: Earned hours do not include those in which grades of F or W/F were earned or courses in which the student withdraws or audits. However, the earned hours do include transfer hours.

2. SUSPENSION. Following a one-semester probationary period, an undergraduate student will be suspended at the end of the spring or summer semester if the 2.50 semester grade point average is NOT earned AND the cumulative grade point average falls into one of the following categories:
   * a 1.49 or lower cumulative grade point average with 0-25 credit hours earned (including transfer credit hours);
   * a 1.69 or lower cumulative grade point average with 26-57 credit hours earned (including transfer credit hours);
   * a 1.79 or lower cumulative grade point average with 58-89 credit hours earned (including transfer credit hours);
   * a 1.89 or lower cumulative grade point average with 90 or more credit hours earned (including transfer credit hours).

NOTE: Earned hours do not include those in which grades of F or W/F are earned or courses in which the student withdraws or audits. However, the earned hours do include transfer credits.

3. A mandatory one-year separation is required for a first suspension before a student can be considered for readmission. If the student has pre-registered for a subsequent semester, all registration will be administratively dropped.

4. Undergraduate students can be placed on suspension only at the end of the spring and summer semesters. A student who earns a suspension GPA at the end of the fall semester is allowed to continue in the subsequent spring semester.

5. The suspension notice appears on the student's transcript. Additionally, notice of whether an appeal was filed and the outcome of the appeal will also appear. In cases where the appeal is granted, the student will need to re-register for courses that were administratively dropped due to the suspension.

6. A student returning from a suspension will be considered for readmis-

7. Students who choose not to appeal their suspensions or whose appeals are denied are eligible to return after one calendar year for a first suspension and two calendar years after a second suspension. Students who are suspended for a third time are no longer eligible to attend Old Dominion University or any of its satellite campuses. Students who are suspended from the University in programs with grade point average requirements higher than 2.0 should be aware that they may not be eligible to return to that program upon reinstatement from a first suspension. Students returning from a second suspension must be accepted by their major department before being readmitted to the University.

8. All students readmitted from a one- or two-year suspension must attend a workshop conducted by the Office of Continuance and Undergraduate Services prior to the start of classes to complete the readmission process. Students who fail to attend a workshop will be dropped from all classes if they are registered and their readmission will be revoked for the semester. Students in this situation will be eligible to repay for the next semester, but must begin the readmission process again.

9. If extenuating circumstances resulted in suspension, an appeal may be filed. All appeals must be submitted in writing with the Suspension Appeals Form or through the web site (www.odu.edu/ugcont—Suspension Appeal Form included) to the appropriate college or department within two weeks of the date posted to the suspension notice. Only the appropriate appeals committee, whose decision is final, grants an appeal. Appeals committees only meet after the spring and summer semesters; therefore, appeals are not reviewed at the end of fall under any circumstances.

Guidelines for filing a suspension appeal:

All students have the right to appeal their suspension if extenuating circumstances warrant such action. Suspension appeals must be delivered by the posted appeal deadline to the dean's office in the college of the major or Advising Services if the student is advised by a professional advisor in that office. Late appeals will not be reviewed.

Appeals must be based on circumstances of recent origin that were beyond the control of the student and for which official withdrawal from the course(s) was not an option. Appeal letters must include the following to be reviewed:

a. The extenuating circumstances such as work, poor study environment, finances, illness, or personal relationships that have adversely affected performance should be documented: i.e. physician's statement, letter from employer, letter from family members.

b. Each semester of grades below the 2.0 minimum grade point average must be explained in detail as stated in item a.

c. Reasons why official withdrawal was not requested must be stated.

d. A plan of action for subsequent enrollment, should the appeal be granted, must be included.

e. Appeal letters must be typed and authored by the sus-
pended student, whether submitted through the mail, in person, or through the website. Because there is no face-to-face meeting with appeal committee members, appeal letters must provide sufficient detail and explanation regarding the aforementioned points.

Students whose appeals are granted are REQUIRED to participate in a college or University retention program in the next enrolled semester. Information about these retention programs will be provided with the notification that the appeal was granted.

10. Students who are suspended for a third time from Old Dominion University are expelled. The expelled student will not be allowed to reapply to the University for admission.

11. Students who are suspended while under Non-degree Admission status, and who reapply and are readmitted, should be aware that they are readmitted to the non-degree status. Non-degree students must decide upon a major emphasis before readmission is granted. Non-degree students are not eligible for financial aid.

12. Students who fail to appeal the spring semester suspension may submit an appeal during the summer appeal process. Appeals submitted after the one-year or two-year separation has been served will not be accepted.

13. Students readmitted to the University from suspension or due to a successful suspension appeal do not automatically qualify for financial aid. Please refer to the Financial Aid section of the catalog for the Financial Aid Continuance policy. All students who are suspended should contact their financial aid counseling team immediately to discuss their options. It is important that students are aware from the outset that a minimum of six credit hours with a GPA of 2.00 or more is a prerequisite to the appeal to re-establish financial aid eligibility. The six credit hours must be completed during one term (semester).

Credits Earned While Under Suspension

Credits earned at another accredited institution at a grade level of C (2.00) or better while an undergraduate student was under suspension from Old Dominion University will be accepted upon receipt of official transcripts following readmission.

Adjusted Resident Credit

Any undergraduate student who leaves Old Dominion University for at least one calendar year will be given the option of requesting a grade-point-average status equivalent to that of a student admitted as a transfer according to the following conditions and regulations.

The following conditions governing eligibility will apply:

1. Prior to the one year's absence, the student must have a grade point average less than 2.00. Upon returning to the University, the student must earn a minimum of 30 credits at Old Dominion University to be eligible for a degree. This must include twelve hours of upper-level courses in the department of the declared major.

2. The student must have separated from the institution for at least one calendar year. A term in which the student received W grades cannot be counted as part of the calendar year separation.

3. Upon return, a full-time student must have attained a 2.00 grade point average for all work attempted in the first semester or upon completion of the first 12 semester hours, if part-time. Non-degree credit work shall not be counted toward fulfillment of this requirement.

4. Upon satisfying the above requirements, the student must submit the application for Adjusted Resident Credit, at which time a 2.00 grade point average for all work attempted since his or her return must have been earned.

5. This option will be available only once during the student's career at Old Dominion University and must be elected by the end of the second semester following qualifications as described in paragraphs 3 and 4 above. (In all cases, the Adjusted Resident Credit option must be elected and the student's record adjusted prior to graduation.) Upon written petition by the student and recommendation of the department chair, waivers of the time limit to elect Adjusted Resident Credit and the requirement that students have less than a 2.00 grade point average can be made by the dean of the college in which the student's major program resides.*

6. Consultation and approval by the appropriate department and approval of the dean(s) of the college(s) in which the student's major program resides will be required. Once an application is approved and submitted, the student will not be permitted to change status for the purpose of computing the cumulative grade point average or application of credit toward graduation.

7. All grades received at the University will be part of the individual's official transcript and will be used to determine honor awards. However, computation of a new grade point average for graduation and continuance will be based on work performed subsequent to reinstatement.

8. Under this option: (1) eligible students will receive degree credit only for those courses in which grades of C (2.00) or better were earned prior to readmission; (2) likewise, hours attempted for courses in which grades of D or F were received prior to readmission will not be considered in computing the student's new cumulative grade point average; and (3) grade points earned for any course completed prior to readmission will not count in determining the student's new cumulative grade point average.

9. In cases of dual jurisdiction, University continuation regulations will prevail.

Students wishing to avail themselves of this policy may receive procedural information from the Office of the Registrar.

Classification of Undergraduate Students

A sophomore must have completed 26 semester hours. A junior must have completed 58 semester hours. A senior must have completed 90 semester hours.

Auditors are those students who desire to attend classes but do not plan to receive credit. Grades are not retained for these students.

Transfer students will receive classifications based upon credit hours accepted by this institution.

Classification of students will be determined at the end of each semester.

Examinations

The University firmly believes that a comprehensive evaluation of a student's achievement in a course is a vital part of the educational process. Final examinations, if given, are to be administered according to the published schedule. Upon request of the instructor, exceptions to this regulation may be made by the dean, or if he or she wishes to delegate the authority, by the department chair.

In the event that the date of a final examination is changed to other than that of a scheduled time, provisions will be made by the instructor for any student who cannot comply with the schedule change.

Any student who has three examinations scheduled in one calendar day and is unable to resolve the problem informally with the instructor or instructors may petition the dean for relief.

All examinations are to be retained for one year by the faculty members. Students have the privilege of requesting conferences with the instructors in regard to their final examination grades.

The Dean's List

The Dean's List is announced at the end of each term. Any undergraduate student taking 12 or more hours of degree credit for grade point credit who attains a grade point average of 3.40 or higher with no grade below C (2.00) is placed on the Dean's list. The student must also receive a passing grade on any nondegree credit courses in which he or she is enrolled. Students who receive grades of I are not placed on the Dean's List.

Graduation with Honors

Baccalaureate Degrees. Baccalaureate degrees with honors are conferred in accordance with the following cumulative grade point averages on work attempted at Old Dominion University:

* Waivers of the requirement that students have less than a 2.00 grade point average can be made only in those programs that require greater than a 2.00 for admission.
### Honors

<table>
<thead>
<tr>
<th>Honors</th>
<th>Minimum Number of Credit Hours</th>
<th>Minimum Number of Grade-Point Graded Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cum Laude</td>
<td>3.40-3.65</td>
<td>60</td>
</tr>
<tr>
<td>Magna Cum Laude</td>
<td>3.66-3.85</td>
<td>60</td>
</tr>
<tr>
<td>Summa Cum Laude</td>
<td>3.86-4.00</td>
<td>60</td>
</tr>
</tbody>
</table>

These designations apply only to candidates who have completed 60 or more credit hours of work at Old Dominion University. At least 54 of the hours must be in grade-point graded courses. Honors designations will be posted to students’ records and appear on the diploma.

Candidates who transfer to Old Dominion and thus do not qualify for honors designations because they have not completed 60 hours at Old Dominion University but who have 45 or more graded hours at Old Dominion University with a cumulative grade point average of 3.66 or higher will be recognized as graduates with distinction. This information will be posted to students’ records and appear on the diploma.

To determine eligibility for graduation with honors or with distinction, the student’s complete record, including grades and hours for courses that have been forgiven using grade forgiveness or adjusted through the Adjusted Resident Credit policy, will be evaluated to calculate the final grade point average. If the student’s overall average is sufficient, graduation with honors or with distinction will be posted to the student’s record and appear on the diploma.

Credit earned under the Experiential Learning credit options (advanced placement, University exams, departmental exams, external exams such as CLEP and DANTES, portfolio review, training, and correspondence courses) does not apply to the 60 credit hours required for graduation with honors or the 45 hours required for graduation with distinction.

For students in approved accelerated degree programs, all graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, appear on the undergraduate transcript, and be used to determine graduation with honors.

**Departmental Honors.** Undergraduate students may earn the designation of departmental honors on their diplomas. Minimum University standards for departmental honors are:

- Minimum cumulative GPA of 3.25;
- Minimum GPA in the major of 3.50;
- Completion of at least two 300- or 400-level courses designated by the department to be honors courses; and
- Completion of at least 60 credit hours at Old Dominion University, 54 of which must be in grade-point graded courses.

Individual departments may set other eligibility standards in addition to the University standards. Interested students should contact the Honors College for more information.

**Contract Honors Courses.** Students with a grade point average of at least 3.25 may transform any upper-division course into an Honors course on an individual basis. With the advice and consent of the instructor, students take one or more courses that can be converted into Honors.

No grade below B is accepted for Honors designation. In addition, contract honors courses may be used to meet requirements for departmental honors. Interested students should contact the Honors College for additional information.
Requirements for Undergraduate Degrees

Overall Requirements for Baccalaureate Degree

A candidate for a baccalaureate degree must present a minimum of 120 semester hours (except where otherwise noted in degree program descriptions). A minimum overall cumulative grade point average of C (grade point average of 2.00) must be made in all courses taken, and an overall cumulative grade point average of at least 2.00 must be attained in the major except in those programs requiring a grade point average above 2.00. Grades in all courses taken, including failing grades, are counted when calculating a student’s cumulative grade point average. Grades in all courses taken in the major, including failing grades, are counted when calculating a student’s grade point average in the major. Students completing a minor must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor.

A student who seeks a bachelor’s degree from Old Dominion University must, in addition to meeting other requirements of the University, earn a minimum of 25 percent of the total number of credits required for the degree, for example 30 credits in a 120-credit degree program, through on- or off-campus instruction. This must include a minimum of 12 hours of upper-level courses in the department of the declared major. Some program residency requirements exceed the University minimum. The responsibility for meeting the requirements for a degree rests with the student.

University General Education Requirements

All students receiving baccalaureate degrees from Old Dominion University shall complete the University’s General Education program. At the lower division (freshman and sophomore), the program’s designed courses develop the skills (Goals 1-2 below) needed for later study and the perspectives (Goals 3-4) needed to understand the various approaches to knowledge at work in the University. At the upper division (junior and senior), an in-depth multidisciplinary experience broadens the student’s ability to apply the skills and perspectives at a more advanced level.

College Requirements

Students should consult with the department of their major for further information regarding the following.
1. Major programs may require specific Skills or Perspectives courses.
2. When requirement hours vary, major programs specify the number.
3. In addition to the University General Education Requirements, college requirements must be met. For example, the College of Arts and Letters requires foreign language proficiency at the fourth-semester level for the Bachelor of Arts degree.

General Education and Experiential Learning

All lower-level requirements within this program may be met by credit awarded to students who are able to demonstrate appropriate experiential learning that fulfills the objectives of the particular skills and perspective requirements. Though not all learning and experiences are worthy of being recognized with the reward of academic credit, the principle that supports the policy is that many valid learning experiences worthy of such credit do take place outside of the traditional classroom setting. For procedures to meet General Education Requirements in this manner, please consult the section of this Catalog on Experiential Learning Credit Options at the Undergraduate Level or contact the director of experiential learning at xlearn@odu.edu or 683-6388.

General Education Philosophy

The General Education program at Old Dominion University represents the common core of the baccalaureate degree. It prepares students for pursuing a major, for broadening their views of life, and for understanding an increasingly global and diverse world. It provides students with the basic skills and intellectual perspectives to engage in the search for knowledge. The General Education program develops analytical and critical thinking skills and the ability to make reasoned judgments. Students will also discover that learning is a complex, multifaceted, and lifelong endeavor.

General Education Goals and Objectives

The Goals (1-5) and particular objectives of General Education are as follows:
1. Develop and demonstrate effective uses of language.
   A. Develop written communication skills.
   B. Develop oral communications skills.
   C. Develop ability to use a foreign language.
   D. Develop written communication skills in the major at the upper-division level.

2. Develop mathematical and computer literacy.
   A. Develop basic mathematical competence.
   B. Develop computer competence.

3. Develop an understanding of the natural sciences and technology and their contributions to human culture.
   A. Understand the concepts and methods of the natural sciences.
   B. Understand the nature of technology and/or its impacts on society and the environment.

4. Develop an understanding of human behavior, society and culture, with specific attention to technology, international perspectives and issues related to ethnicity, race and gender.
   A. Develop an understanding of history and the ability to think critically about the past.
   B. Think critically about beliefs, values, and moral issues that have shaped human society.
   C. Critically analyze the fine and performing arts and their contribution to culture.
   D. Critically analyze literature and its contribution to culture.
   E. Develop an understanding of behavioral, political, economic, and social systems.

5. Integrate knowledge at the advanced level.
   Option A. Complete a second major or a minor.
   Option B. Complete a focused study of a specific issue from different disciplinary perspectives.
   Option C. Complete an international certificate.

Students may not use courses in the discipline of their declared major to fulfill University General Education Requirements, except where such requirements are limited specifically to their major field.

Since the skills and perspectives are needed for major courses and upper-division General Education, students should meet those requirements during their freshman and sophomore years.

Transfer Policies for General Education Requirements

Students who have received an Associate in Arts (A.A.), Associate in Science (A.S.), or Associate in Arts and Sciences (A.A. and S.) degree from Richard Bland College or the Virginia Community College System (including the A.S. and A.A. & S. in general studies as modified by Old Dominion University*) have met all General Education requirements except those specified as major or college requirements and the upper-division requirement that is met through completion of a second degree or major, a minor, or an approved focus area cluster. Students who have received an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System in specific articulated programs (to include 37 specified general education credits) have met all General Education requirements except those specified as major or college requirements and the upper-division requirement that is met through completion of a second degree or major, a minor, or an approved focus area cluster. Students who have received an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System in specific articulated programs (to include 37 specified general education credits) have met all General Education requirements except those specified as major or college requirements and the upper-division requirement that is met through completion of a second degree or major, a minor, or an approved focus area cluster. Students who have received an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System (including the A.S. and A.A. & S. in general studies as modified by Old Dominion University*) have met all General Education requirements except those specified as major or college requirements and the upper-division requirement that is met through completion of a second degree or major, a minor, or an approved focus area cluster.

* Modifications are as follows: (1) the general studies degree must have been received on or after April 1993, (2) Northern Virginia Community College general studies degree holders must have MTH 151 or higher, and (3) Blue Ridge Community College general studies degree holders must have MTH 151 or higher and eight hours of science with a lab.

54 OLD DOMINION UNIVERSITY
Lower-Division Requirements
(freshman and sophomore years)

NOTE: Wherever so advised below, students should consult their major program for more specific and timely information: either the students’ assigned advisor, the chief departmental advisor (CDA) or the departmental chair.

I. Skills. Completion of course work in the skills areas ensures that all students possess the basic tools with which to pursue their major interests.

A. Written Communication—six hours.

ENGL 110C and ENGL 11T, 131T, HIST 111C or PHIL 111C. Students are advised to consult the department of their major program. Students will also demonstrate written communication skills in the major by taking a Writing Intensive (W) course at the upper-division level.

Criteria for Writing Intensive courses include:

a. Students demonstrate, in a series of individual (not group) assignments, their mastery of the subject in a discipline, through the writing of formal documents.

b. For each writing assignment, the instructor provides feedback to the student, evaluating content and writing style (organization, development, logic, coherence and mechanics).

c. Types of documents for writing assignments include laboratory reports, critiques of performances, proposals, case studies and others appropriate to a particular discipline.

d. Writing assignments comprise more than half of the overall course grade.

B. Oral Communication—three hours

COMM 101T, 103T and 112T. Students may meet this requirement by completing an oral communication course appropriate to the student’s program of study or through significant presentations required within major courses. Students are advised to consult the department of their major program.

Majors approved to meet this requirement through major courses are: College of Arts and Letters - all art majors, communication—theatre emphasis, foreign languages, geography, and all music majors except the B.A. program and the music education program; College of Education - speech language pathology and human services counseling; College of Engineering and Technology - civil engineering, environmental engineering, electrical engineering, computer engineering and mechanical engineering; College of Health Sciences - medical technology, nursing, nuclear medicine technology, dental hygiene, and health sciences; and College of Sciences - biology, biology secondary education option; chemistry, biochemistry, mathematics, statistics, ocean and earth science, physics, and physics secondary education option.

C. Mathematics—three hours

MATH 101M, 102M, 162M, STAT 130M. For the appropriate course, the major program should be consulted. Some programs require more advanced 200-level courses.

Students should strive to complete the mathematics General Education requirement within their first 30 hours at Old Dominion University and are expected to have completed the requirement before the end of their first 60 hours at the University. Students should be aware that waivers of the mathematics General Education requirement are not granted, and all students are required to complete this requirement before graduating.

D. Foreign Languages—zero to six hours (does not apply to students earning high school diplomas before December 31, 1985)*

ARAB 111F

CHIN 111F

FR 101F-102F

GER 101F-102F

HEBR 111F

ITAL 101F-102F

JAPN 111F

LATN 101F-102F

PRTG 101F-102F

RUS 101F-102F

SPAN 101F-102F, 121F

111F courses are six credit hours each. Students may meet this requirement by successfully completing the third level in one foreign language or the second level in each of two foreign languages in high school or by completing a single foreign language at the 102F or 111F level or equivalent work from another institution. Students who have had some foreign language experience but are unable to be exempted from this requirement may complete just the 121F course in the case of Spanish or the 102F course in foreign languages if scores on the CEEB Foreign Language Achievement Test so indicate.

The College of Arts and Letters and the College of Business and Public Administration require foreign language proficiency at the fourth-semester level for students pursuing Bachelor of Arts degrees.

Students whose native language is not English and who were required to satisfy English language proficiency requirements when admitted to Old Dominion University are exempt from taking a foreign language for General Education, the College of Arts and Letters, and the College of Business and Public Administration.

American Sign Language is not accepted by Old Dominion University to meet General Education or college requirements in foreign language.

E. Computer Skills: various levels of computer knowledge are specified by the major programs in courses developed for this purpose (CS 101D, 149D, and OTS 251D) or as part of other required courses. A departmental exam is available in the Computer Science Department for students desiring to challenge CS 101D. For the appropriate course, the major program should be consulted.

Majors approved to meet this requirement through major courses are: College of Arts and Letters - all art majors, English, English teacher preparation, foreign languages teacher preparation, history teacher preparation, IDS early childhood and special education, IDS elementary education, and all music majors; College of Business and Public Administration - e-commerce systems, economics (B.S.B.A only), decision sciences, finance, international business, information systems and technology, management, and marketing; College of Education - speech language pathology, health and physical education teacher preparation, and recreation and tourism studies; College of Engineering and Technology - all majors; College of Health Sciences - all majors except the Bachelor of Science in Health Sciences; and College of Sciences - biology teacher preparation, computer science, earth science education, mathematics, statistics, physics, and physics teacher preparation.

II. Perspectives. Courses in the perspectives develop the students’ critical and analytical thinking abilities. They also develop understanding of the various approaches to knowledge, the contributions various academic disciplines can make to solving specific problems, and the effective use of the English language. Courses in the perspectives also develop and reinforce written communication skills and include relevant insights into technology. In addition, courses within each perspective focus on objectives unique to that perspective.

A. Foundation to Perspectives—three hours

New Portal to Appreciating Our Global Environment. Required for all first-year students and transfer students with fewer than 12 transfer credits. May be substituted for one three- or four-hour course from Perspectives B-G to be determined by the academic department or program. Refer to the information below or consult the major program for specific approved substitutions. The goals for this foundation course are to (1) provide students with multidisciplinary perspectives on environmental issues; (2) raise students’ awareness of the interdependence of various perspectives and issues; (3) introduce students to leading scholars, policy makers, and thinkers focusing on global environmental issues; (4) require students to engage in critical thinking as they address environmental issues; and (5) have students produce a relatively brief but rigorous research paper on an environmental issue of their choice.

The College of Arts and Letters has approved the following substitutions. Students in the interdisciplinary studies-teacher preparation major must substitute GEN 101 for the philosophy perspective. Students pursuing majors leading to a Bachelor of Music degree must substitute GEN 101 for the second laboratory science course. Students pursuing majors leading to the Bachelor of Arts and Bachelor of Fine Arts degrees in art must...
substitute GEN 101 for the third natural science or technology course. All other majors in the College of Arts and Letters may substitute GEN 101 for either one history, one social science or one natural science/technology perspective course. Students should consult their advisors for additional information.

All majors in the College of Business and Public Administration (except the B.A. in economics) may substitute GEN 101 for a course in one of the following perspective areas: fine and performing arts, history, literature, or philosophy. Students pursuing the Bachelor of Arts in economics may substitute GEN 101 for a course in the fine and performing arts, history, literature, philosophy, or social science perspective areas. Students should consult their advisors for additional information.

The Darden College of Education has approved the following substitutions. Students in the speech-language pathology and audiology major may substitute GEN 101 for a course in the fine and performing arts, literature or philosophy perspective areas.

All majors in the Department of Occupational and Technical Studies must substitute GEN 101 for the literature perspective. Students majoring in human services may substitute GEN 101 for a course in the natural science and technology perspective area. Students majoring in recreation and tourism studies, exercise science, and health and physical education teacher preparation may substitute GEN 101 for a course in the fine and performing arts, history, literature, or philosophy perspective areas. Students majoring in sport management may substitute GEN 101 for a course in the fine and performing arts, literature, natural science and technology, or philosophy perspective areas. Students should consult their advisors for additional information.

All majors in the Frank Batten College of Engineering and Technology may substitute GEN 101 for a course in one of the following perspective areas: fine and performing arts, history, literature, philosophy or social science. Students should consult their advisors for additional information.

All majors in the College of Health Sciences may substitute GEN 101 for a course in one of the following perspective areas: fine and performing arts, history, literature, philosophy or social science. Students should consult their advisors for additional information.

The College of Sciences has approved the following substitutions. Students majoring in biology may substitute GEN 101 for a course in the history or social science perspective areas. Students majoring in chemistry, biochemistry, and physics must substitute GEN 101 for a course in the social science perspective. Students majoring in computer science may substitute GEN 101 for a course in the history, philosophy or social science perspective areas. Students majoring in mathematics may substitute GEN 101 for a course in the fine and performing arts, history, literature, philosophy, or social science perspective areas or the third course in the natural science and technology perspective. Students majoring in ocean and earth science may substitute GEN 101 for a course in the fine and performing arts, literature, philosophy or social science perspective areas. Students majoring in psychology may substitute GEN 101 for a course in the social science perspective or the third course in the natural science and technology perspective. Students should consult their advisors for additional information.

B. Fine and Performing Arts—three hours.

This perspective emphasizes artistic creative endeavor and appreciation and the history of the arts. The courses include field experience with the professional arts community in Hampton Roads as well as with the faculty of relevant departments. The objectives are to foster an appreciation of aesthetic experiences, develop abilities to make reasoned aesthetic judgments and develop an understanding of diverse cultures.

Courses that meet the fine and performing arts perspective are ARTH 121A; ARTS 122A; MUSC 264A; DANC 185A; and THEA 241A.

C. History—three or six hours.*

This perspective emphasizes the importance of understanding the past. The objectives are to promote an understanding of Western and non-Western cultures, values and institutions; to develop understanding of the perspectives, contributions and concerns of women and minorities; and to develop the student’s ability to make reasoned judgments.

Courses that meet the history perspective are HIST 101H, 102H, 103H, 104H, and 105H.

D. Literature—three hours.

This perspective emphasizes the contribution of literature to culture. The objectives are to develop, through critical reading and analysis, the effective use of the English language, the ability to make reasoned aesthetic judgments, and an understanding of the perspectives, concerns and contributions of women and minorities.

Courses that meet the literature perspective are ENGL 112L, 144L, and FLET 100L.

E. Philosophy—three hours.

This perspective emphasizes the ability to think critically about beliefs, values and moral issues that have shaped human society. The objectives are to develop abilities to make reasoned ethical judgments and to foster understanding of Western and non-Western cultures and values.

Courses that meet the philosophy perspective are PHIL 110P, 120P, and 150P.

F. Natural Science and Technology—eleven or twelve hours.

This perspective has two requirements. The first is an eight-hour two-semester sequence in one of the natural sciences, including a full-semester laboratory schedule each semester. These courses introduce the disciplines and the methods of science and develop the abilities to make reasoned judgments based on scientific and technological considerations.


The second requirement is a three- or four-hour one-semester course in a second natural science or in technology. Courses include a three- or four-hour approved natural science course, at any level and different from the one chosen for the first requirement—an additional "N" course, GEOL 120K, 122K, 302K, SCI 302K, or a three-hour approved course in technology—ARTH 352T; CHEM 351T; COMM 472T; GEOG 306T; HIST 304T, 305T, 360T, 361T; IT 360T; MUSC 335T; OMPT 303T; OTS 110T, 370T; PHIL 344T, 355T, 383T; POLS 350T; WMST 390T. The second requirement can also be met by major requirements. Majors approved to meet this requirement through major courses are: College of Business and Public Administration—all majors except the B.A. in economics; College of Education—exercise science, health and physical education teacher preparation, and all majors in occupational and technical studies; College of Engineering and Technology—all majors; College of Health Sciences—all majors; and College of Sciences—biology, chemistry, biochemistry, computer science, ocean and earth science, and physics.

G. Social Science—three or six hours.*

For appropriate hours, major programs should be consulted.

The goals of this perspective are to develop the ability to make reasoned ideological, ethical or scientific judgments, promote an understanding of the perspectives, contributions and concerns of women and minorities, and encourage understanding of both Western and non-Western cultures and their values, in addition to American culture and institutions. If six hours are required, the courses must be from different disciplines.

Courses that meet the social science perspective are ANTR 110S; COMM 200S; CRJS 215S; ECON 200S, 201S, 202S; GEOG 100S, 101S; POLS 100S, 101S; PSYC 215S; 230S; SOC 201S; WMST 215S.

NOTE: For General Education requirements that can be met through the major (computing, oral communication, and the second requirement in natural science and technology), students who complete the required courses in their major that meet these requirements and then change to a major that does not meet the requirement through courses in the major will have met the requirement for the new major.

* Students in professional degree programs complete three hours and students in traditional degree programs complete six hours. Professional and traditional degree designations can be found on the Synopsis of Degree Programs chart in this Catalog.
Upper-Division Requirements (junior and senior years)

Students can complete this requirement by Option A, B, or C.

**Option A:** Any University-approved minor,* second degree, or second major.*

**Option B:** Cluster: advanced study in a focus area;** nine hours of upper-division courses on a specific issue, viewed from multidisciplinary perspectives. Three hours can be in the major.

Cluster Coordinator: Lucien X. Lombardo, Professor of Sociology and Criminal Justice

Courses in each focus area must be selected from a predefined approved cluster containing no more than nine courses (27 hours). Each nine-course cluster must contain at least one course from the natural or social sciences and at least one course from the humanities. Students may choose these courses or from the other courses in the cluster. For students completing an upper-division cluster, six hours must be taken through Old Dominion University.

Approved clusters are as follows.

1. **Administrative Leadership and Ethics for Professional Roles**
   - **Cluster Focus:** The intent of the Administrative Leadership and Ethics for Professional Roles cluster is to develop management-related skills. The cluster is designed to improve the student's professionalism through an understanding of applied ethics, effective communication, processes in organizations, applied psychology, and legal issues in the workplace. An appreciation for the qualities of leadership, the functions of administration, and a sensitivity for ethical decision making will allow the student to apply for a wider variety of positions.
   - COMM 351 Interpersonal Communication in Organizations
   - HLTH 425 Leadership and Management for Health Professionals (or equivalent course in the discipline including CHP 450, DNTH 416, ENVH 402W, MEDIT 403W, NURS 475W, and NURS 480W)
   - MGMT 325 Contemporary Organizations and Management
   - MGMT 350 Employee Relations or
   - MKTG 414 Ethics and Social Issues in Administration
   - PHIL 303 Business Ethics or
   - PHIL 345 Bioethics
   - PSYC 303 Industrial/Organizational Psychology

2. **Aesthetics in Art and Science**
   - **Cluster Focus:** This cluster focuses on the interaction of aesthetics, perception, and science. It will help prepare a student to understand the trends in technology of art leading into the next century. Different courses discuss themes including: the science and aesthetics in music and visual art; the relationship between stimulus, physiology, and psychology of perception; the relationship between perception and underlying physical phenomena; the role of aesthetics in science and science in aesthetics; the science underlying technology in art; and analysis of concepts fundamental to describing and evaluating works of art.
   - ARTS 304 Color
   - MUSC 410 Psychology of Music
   - PHIL 324 Philosophy of Art
   - PHYS 311 Color in Nature and Art
   - PHYS 332W Physics of Music and Musical Reproduction
   - PSYC 313 Perception

3. **The Designed World**
   - **Cluster Focus:** This cluster explores the interwoven historical, cultural, aesthetic, perceptual, and technical domains of the designed world. That virtually all aspects of the human-built world are designed is a generally accepted belief; however, it is not given the careful scrutiny it deserves. Creative planning and critical analysis of design dynamics are emphasized within the context of these course offerings.
   - ARTH 435W Modern Architecture
   - ARTH 439 Art Between the Wars: 1919-1939
   - GEOG 310 Geography of the City or
   - GEOG 412 Cities of the World
   - OTS 386 Architecture
   - OTS 422 Fashion Design and Coordination
   - PSYC 313 Perception
   - PSYC 344 Human Factors

4. **Environmental Management**
   - **Cluster Focus:** Continuing environmental degradation is a worldwide problem threatening the quality of life and its viability. The problem can only be understood and addressed by drawing upon the resources of multidisciplinary approaches. The multidisciplinary perspective of this cluster focuses on the human dimensions of the human-environment equation and includes geographical and ecological approaches, scientific and technological methodologies, planning and public policy issues, and ethical, political, economic, and legal considerations.
   - CEE 458 Sustainable Development
   - ECON 447 Natural Resources and Environmental Economics
   - ENVH 402W Environmental Health Administration and Law
   - GEOG 320W Environmental Management
   - PHIL 344T Environmental Ethics (writing intensive course)

5. **Explorations in Conflict and Resolution**
   - **Cluster Focus:** Taking courses in this cluster allows students to study how conflict develops, identify factors which lead to conflict, explore how conflict is experienced, and learn processes and techniques which attempt to regulate and resolve conflict. Some courses provide specific contexts where conflict emerges: i.e., between nations (war), between institutions (government and the media), between groups (ethnic conflict), or between interests (those involved in economic development). Other courses take broad approaches which cut across a variety of forms and contexts of conflict (e.g., violence from suicide to genocide) or general principles involving processes of conflict and conflict resolution. These latter courses serve as synthesizing courses and provide information on the regulation and resolution of conflict.
   - COMM 421 Communication and Conflict Management
   - CRJS 401W Understanding Violence
   - ECON 454W Economic Development
   - ENGL 472 America in Vietnam: The Government and the Media in Conflict
   - GEOG 320 Political Geography
   - HIST 410 War as a Human Experience

6. **Health and Wellness**
   - **Cluster Focus:** The Health and Wellness cluster explores personal involvement in and commitment to health and wellness and the factors that influence the health status of individuals and society. This cluster fosters an appreciation for personal responsibility for health and strategies to enhance and preserve the individual's and the public's health. Societal health and the factors that impact on the health and wellness of a community and the individual's role in health policy are examined. Students gain an awareness of the cultural, psychological, sociological and ethical issues affecting and effected by the health and wellness of individuals and the society in which they live.
   - CHP 400 Philosophy of Health
   - EXSC 403 Lifetime Fitness and Wellness
   - PHIL 345 Bioethics
   - PSYC 306 Health Psychology
   - RTS 485 Philosophy of Play
   - SOC 440W The Sociology of Health and Illness

7. **Impacts of Technology**
   - **Cluster Focus:** This cluster develops a broader understanding of technology and its impact on individuals, societies, and the environment. It provides the social context and the historical and philosophical backgrounds needed by informed students to evaluate technology and its impacts. The cluster equips students

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* Bachelor of Science in Business Administration majors pursuing a minor or second major in the College of Business and Public Administration (CBPA) must also take six hours of 200-400 level courses outside the CBPA. Students majoring in Economics who pursue a minor or second major in the College of Business and Public Administration fulfill upper-division general education requirements and do not need to take the six hours of 200-400 level courses outside the CBPA.

** All international business majors must take the specific cluster courses that have been designated for their region. Refer to the international business and regional courses section of this catalog or contact the area coordinator for these courses.
with skills to make better personal decisions about technology and more appropriate choices for their futures.

CS 300 Computers in Society
GEOG 305 World Resources
GEOG 306T Hazards: Natural and Technological
HIST 389T Technology and Civilization
OPMT 303T Operations Management and Technology
OTS 370T Technology and Society
OTS 382 Industrial Design
PHIL 383T Technology: Its Nature and Significance
POLS 380 Technology and War

8. Understanding the World of Children

Cluster Focus: The cluster on Understanding the World of Children develops students’ understanding of the world of children from a “child-centered” perspective. This perspective challenges approaches in the various disciplines that have traditionally denied children their human rights and dignity. In place of the traditional perspectives, courses in this cluster frame the study of children within children’s understanding of the world and the value of children to our world.

COMM 427 Children and Communication
CRJS 403W Violence in the World of Children
ESSE 476 Practical Applications in the World of Children
PSYC 351 Child Psychology
SOC 402 Child Welfare

9. The Urban Community

Cluster Focus: This cluster encourages an interdisciplinary approach to the problems and crucial issues that emerge from urban environments. Students gain an understanding of the issues associated with the convergence of diverse populations in urban locations and acquire an appreciation of the complexities of the interlocking and contingent nature of urban problems. This will be accomplished through an examination of the topical areas of common space, diversity, urban services, disorder, and work.

CHP 415W Critical Issues in Community Health
CRJS 355 Crime and the Community
ECON 445 Urban Economics
GEOG 310 Geography of the City or GEOG 412 Cities of the World
HIST 303 The City in Western Civilization
PSYC 431 Community Psychology

10. World Cultures: Values and Visions

Cluster Focus: This cluster develops an understanding of human behavior in different cultures. In order to interpret information from other countries and ethnic groups, students need to learn that certain common notions such as perceptions of personhood, the organization of time and space, and the appropriate organization and behavior of social groups vary from country to country. This cluster will explore different cultural perspectives and value systems. Students should emerge with a more sophisticated understanding of their own and others’ cultures.

ENGL 371W Communication Across Cultures or COMM 400W Intercultural Communication
IT 425W Information Systems for International Business
MGMT 361 International Business Operations
MKTG 411 Multi-National Marketing
PHIL 354 Comparative Philosophy: East and West
PSYC 420 Cross-Cultural Psychology or ANTR 320 The Sexes in Cross-Cultural Perspective
WMST 401W Women: A Global Perspective

Foreign language and culture: FR 320, or GER 355, or GER/FLET 445/COMM 444, or JAPN/FLET 310W, or SPAN 320, or SPAN 321

Study Abroad: Any study abroad course at the 300-400 level that offers three credits can fulfill one course requirement for cluster 10. In cases where a study abroad course fits the themes of another cluster, students may request approval from the university cluster coordinator to use that study abroad course.

Option C: International Business and Regional Courses
This option requires ECON 450: International Economics and six hours of approved courses from a selected regional focus described below.

Asian Focus (six hours selected from the following)

ASIA 460 Major Issues in Asia (interdisciplinary)
GEOG 453 Asia
HIST 332 South Asia Since Independence
HIST 336 The Emergence of New China
HIST 439 Politics and Society in East Asia Since 1945
POLS 338W Politics of East Asia
POLS 437 International Relations in East Asia

European Focus (six hours selected from the following)
GEOG 451 Europe
FLET 410W Berlin-Paris: Crucibles of European Ideas (also cross listed as FR 410 & GER 410)
HIST 316 Cold War in History
HIST 321 History of Modern Germany
HIST 406 History of European International Relations: Twentieth Century
POLS 314 Western European Politics
POLS 332 Western Europe in World Affairs

Latin American Focus (six hours selected from the following)
GEOG 454W Latin America
HIST 373 U.S. – Latin American Relations
HIST 470 Democracy and Development in Modern Latin America
HIST 371 Modern Mexico
HIST 372 Central America and the Caribbean Since 1800
POLS 337 Latin American Politics
SPAN 321 Spanish American Civilization

For more information contact Bruce M. Seifert, Department of Business Administration.

A Survey of Interdisciplinary Programs at Old Dominion University

Undergraduate Majors

Interdisciplinary Studies
Individualized Integrated Degree Program
Professional Writing
Zoological Parks Management
Early Childhood (PK-3) and Special Education
Elementary (PK-6) Education
Work and Professional Studies
Asian Studies
International Studies
Women’s Studies
Social Studies Education
Environmental Engineering
Environmental Health
Health Sciences

Undergraduate Minors

African American Studies
Asian Studies
European Studies
International Studies
Japanese Studies
Latin American Studies
Engineering Management
Global Engineering
Gerontology
International Business
Women’s Studies

Undergraduate Clusters

Administrative Leadership and Ethics for Professional Roles
Aesthetics in Art and Science
The Designed World
Environmental Management
Explorations in Conflict and Resolution*
Health and Wellness
Global Engineering in an Interconnected World
Impacts of Technology
Understanding the World of Children
The Urban Community
World Cultures: Values and Visions*
General Education Requirements

I. LOWER DIVISION (32-54 Credit Hours)

A. Skills
1. Written Communication—six hours
   ENGL 110C and ENGL 111C, 131C, HIST 111C, or PHIL 111C
2. Oral Communication—3 hours
   COMM 101R, 103R, 112R
3. Mathematics—3 hours
   MATH 101M, 102M, 162M
   STAT 130M
4. Foreign Language—0-6 hours
   ARAB 111F
   CHIN 111F
   FR 101F-102F
   GER 101F-102F
   ITAL 101F-102F
   JPN 111F
   LATN 101F-102F
   RUS 101F-102F
   SPAN 101F-102F, 121F
5. Computer Skills—3 hours
   CS 101D, 149D
   OTS 251D

B. Perspectives
1. Foundation to Perspectives—3 hours
   GEN 101
2. Fine and Performing Arts—3 hours
   ARTH 121A; ARTS 122A
   MUSC 264A
   DANC 185A
   THEA 241A
3. History—3 or 6 hours*
   HIST 101H, 102H, 103H, 104H, 105H
4. Literature—3 hours
   ENGL 112L, 144L
   FLET 100L
5. Philosophy—3 hours
   PHIL 110P, 120P, 150P
6. Natural Science and Technology
   a. 8 hours
      BIOL 108N-109N, 115N-116N
      CHEM 101N-102N, 115N-116N
      GEOL 110N-112N, 111N-112N
      OCEN 106N-107N
      PHYS 101N-102N, 103N-104N, 111N-112N, 231N-232N
   b. 3 or 4 hours
      An additional “N” course (in a discipline different from the one chosen to satisfy the eight-hour requirement)
      GEOG 126S; POLS 126S-127S; PSYC 226S, 227S; SOC 201S
      WMST 201S
5. Computer Skills—3 hours
   CS 101D, 149D
   OTS 251D

II. Upper Division (Six-Nine Credit Hours Minimum)

A. Option A—Any approved minor,** second degree, or second major.**
B. Option B—Advanced study in a focus-area cluster;*** nine hours, three of which can be in the major.
   Administrative Leadership and Ethics for Professional Roles
   Aesthetics in Art and Science
   The Designed World
   Environmental Management
   Explorations in Conflict and Resolution
   Health and Wellness
   Impacts of Technology
   Understanding the World of Children
   The Urban Community
   World Cultures: Values and Visions
C. Option C—International business and regional courses

Honors Courses that meet General Education Requirements****

A. Skills
1. Written Communication
   ENGL 126C, 127C
2. Oral Communication
   COMM 126R
B. Perspectives
1. Foundation to Perspectives
   GEN 126
2. Fine and Performing Arts
   MUSC 126A; ARTS 126A; ARTH 127A
3. History
   HIST 126H, 127H, 226H, 227H
4. Literature
   ENGL 127L
5. Philosophy
   PHIL 126P, 127P, 227P
6. Natural Science and Technology
   BIOL 122N-123N, 126N-127N
   CHEM 126N-127N
   OCEN 126N-127N
   PHYS 126N-127N, 226N-227N
7. Social Science
   ANTR 226S; COMM 226S; CRJS 226S; ECON 226S, 227S;
   GEOG 126S; POLS 126S-127S; PSYC 226S, 227S; SOC 226S;
   WMST 226S

* Students in professional degree programs complete three hours, and students in traditional degree programs complete six hours. Professional and traditional degree designations can be found on the Synopsis of Degree Programs chart in this Catalog.
** Bachelor of Science in Business Administration majors pursuing a minor or second major in the College of Business and Public Administration (CBPA) must also take six hours of 200-400 level courses outside the CBPA. Students majoring in Economics who pursue a minor or second major in the College of Business and Public Administration fulfill upper-division general education requirements and do not need to take the six hours of 200-400 level courses outside the CBPA.
*** All international business majors must take the specific cluster courses that have been designated for their region. Refer to the international business and regional courses section of this catalog or contact the area coordinator for these courses.
**** Courses listed are open only to students in the Honors College.
International Certificate
Cluster Linked: See * above
Asian Focus
European Focus
Latin American Focus

Graduate-Level Interdisciplinary Programs
Master's Degree in Humanities
Master of Urban Studies
Master of Engineering Management
Doctoral Program in International Studies
Doctoral Programs In Urban Services: Health Services, Urban Education, Urban Management
Doctoral Program in Ecological Sciences
Doctoral Program in Oceanography
Doctoral Program in Biomedical Sciences
Doctoral Program in Environmental Engineering

Requirements for Major
Each undergraduate student shall select a major department or option at the appropriate time in his or her curriculum. In consultation with the head of his or her major department or a designee, the student shall select the courses for the major. At least 12 hours of upper-level course work in the department of the declared major must be taken at Old Dominion University in resident or extension study. All students must complete a writing intensive (W) course in the major at the upper-division level.

Additional Requirements
A student may not use courses in the discipline of his or her declared major to fulfill University General Education Requirements, except where such requirements are limited specifically to the student’s major field.

Students should note that credit toward a degree cannot be obtained for material of what is essentially the same course, but offered in various introductory courses for different audiences. For example, a student receiving credit for BIOL 115N cannot receive credit for BIOL 108N.

Exit Examination of Writing Proficiency. All students following undergraduate degree programs must pass the University’s Exit Examination of Writing Proficiency. See the Undergraduate Writing Program Requirements section of this catalog for more information.

Testing Requirement in the Assessment of Academic Achievement. In response to mandates imposed by the State Council of Higher Education in Virginia, Old Dominion University has developed an institution-wide plan to assess the quality of its academic programs. The plan calls for the evaluation of student achievement at the beginning, during, and at the end of the college experience.

Prior to the completion of degree requirements, all undergraduate students must take one or more measures related to the University’s assessment plan. Students will receive advanced notice of their eligibility to complete the measures, which may be accessed through the University’s site on the World Wide Web. Paper and pencil versions are available for students unable to access the Internet. Failure to take the assessments normally precludes the student’s right to register for the ensuing academic term, or in the case of seniors, the right to receive the baccalaureate degree.

Assessment results are not a part of the student’s transcript.

Sanctions for Noncompliance with Assessment Testing Requirement. All undergraduate students are required to participate in the assessment program. Failure to take assessments when required to do so may preclude the student’s right to register for the ensuing semester, or in the case of seniors, receive the baccalaureate degree.

The University will make all reasonable efforts to assure that students have ample opportunities to complete the required assessments, including the establishment of a number of back-up dates for students unable to access the assessments through the Internet, and arranging for assessments in other cities for students who have left the University. However, certain precautions will be taken to ensure that students submit to the assessment measures and that they take the measures seriously. Further information regarding sanctions procedures is available in offices of college deans and the University Testing Center.

Activity Credits
The University sets a limit of 12 credit hours earned in activity courses that may be applied to any undergraduate degree. The individual college will determine the maximum number of such credits that students may apply in fulfillment of their particular degree requirements. In unusual circumstances, activity credit beyond the established college maximum will require the approval of the appropriate dean. In any case, the total number authorized by the college shall not exceed the limit set by the University.*

Activity courses are generally defined as those that are not predominantly academically oriented and that are service, skill, recreational, or craft in nature, such as performing ensembles and organizations in music, one-credit health and physical education service courses, theatre arts activity courses, and certain military and naval science courses. All activity courses shall be identified specifically in the catalog and the class schedule booklet and can be recognized by the “+” symbol following the course number. Activity credits required by a student’s major department will not be counted against the credit limitation, nor will the credits earned in courses numbered 577-378 that involve extracurricular studies.

Second Baccalaureate Degree
The University will permit a student to acquire a second baccalaureate degree, provided that he or she: (1) pursues a different course of study; (2) meets all University, college, school, and departmental requirements (credits earned for the first degree may be applied, if suitable, toward the second degree); and (3) completes a minimum of 30 semester hours at Old Dominion University that are beyond the requirements for the first degree. A minimum of 150 credit hours is required for students earning two baccalaureate degrees from Old Dominion University. If the degrees are to be awarded simultaneously, an application for graduation and degree certification must be submitted through the respective advisors for each degree program.

Prior to undertaking the second degree, the student must have his or her accumulated credits evaluated and the second degree program approved in writing by the appropriate chief departmental advisor/chair and dean. The student is responsible for initiating and coordinating any action relating to the programs, whether pursuing the two degrees concurrently or successively. The University, as a general rule, will not permit a student to pursue more than two baccalaureate degrees.

Students who have earned a baccalaureate degree at another regionally accredited institution but who wish to acquire a second baccalaureate degree from Old Dominion University will be considered to have fulfilled University General Education Requirements for the second degree.

Students earning two degrees from Old Dominion University have also met general education requirements. All second degree students must meet the college/departmental requirements for both degrees even if some of these requirements are also general education courses.

Students who received their first degree from Old Dominion University should be aware that grades in all undergraduate courses (for both the first and the second degree) will be included in the cumulative grade point average.

Students wishing to earn a second major rather than a second degree should see the “Second Major” section of the catalog for information.

Second Major
The University permits an undergraduate student to pursue a second major. A student pursuing two majors must meet all the degree requirements of one major and at least the departmental requirements of the other. (Most professional degree majors require completion of both the departmental/school and the college requirements.) Requirements for both majors must be completed prior to receiving the baccalaureate degree. The student will receive one baccalaureate degree. Both majors will appear on the transcript. The degree awarded will be determined by the major to which the University and college requirements are applied. Prior to undertaking the second major, the student must have the program approved by the appropriate chief departmental advisor/chair and dean.

Completion of a second major will meet the upper-division General Education Requirements.**

Students wishing to earn a second degree rather than a second major should see the “Second Baccalaureate Degree” section of the catalog.

* Students may be counseled but not required either to take or avoid specific activity courses outside their own fields of study. They are further advised to limit the number of activity credits taken until they have ascertained the limitation on such credits set by the colleges in which they propose to major.
** Students pursuing two majors in the College of Business and Public Administration may not use the second business major to satisfy the upper-division General Education requirement unless one of the majors is economics.
Minors
In addition to the completion of courses in the area of the major field, a candidate for a baccalaureate degree may complete a minor. The completion of a minor is optional. The minor may be chosen to support the major, to offer greater job opportunities to the student on graduation, or to provide recognition of study in a second academic area. Completion of a University-approved minor will meet the upper-division General Education Requirements.

For completion of a minor, an undergraduate student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the academic minor. A minimum of six hours in upper-level courses in the minor requirement must be taken through courses offered by Old Dominion University. A minimum of 12 credit hours is required at the advanced level (300-400) in a specified field of study. Minors meeting those requirements may be proposed by departments or programs and approved by the appropriate college committee and dean, by Committee A and the provost and vice president for academic affairs. Interdisciplinary minors must be reviewed by all colleges and departments involved prior to submission to Committee A of the Faculty Senate.

Specific minor requirements may be found in the section on Colleges, Schools and Departments of Instruction in this catalog.

Procedures. Students who wish to pursue a minor must declare the minor with and be advised by the department offering the minor, their site director, or the distance learning representative. Students completing a minor should apply for it when submitting applications for graduation. Following are approved academic minors:

Arts and Letters
- African-American Studies
- American Studies
- Art History
- Asian Studies
- Communication
- Criminal Justice
- Criminal Justice—Law and Society Specialization
- English
- European Studies
- Film and Video Studies
- Foreign Languages and Literatures
- French
- German
- Spanish
- Geography
- Geography—Environment and Resources Specialization
- Geography—Urban Planning Specialization
- History
- History—Diplomatic and Military History Specialization
- International Studies
- Japanese Studies
- Jewish Studies
- Latin American Studies
- Middle Eastern Studies
- Music Composition
- Music History
- Music Performance
- Philosophy
- Philosophy—Applied Ethics Specialization
- Philosophy—Religious Studies Specialization
- Philosophy—Political and Legal Studies Specialization
- Political Science
- Political Science—International Relations Specialization
- Political Science—Public Law Specialization
- Sociology
- Sociology—Anthropology Specialization
- Sociology—Social Welfare Specialization
- Studio Arts
- Theatre and Dance—Theatre Specialization
- Theatre and Dance—Dance Specialization
- Women's Studies

Business and Public Administration
- Accounting
- Business Administration
- Decision Sciences
- Economics
- Financial Management
- Information Systems and Technology
- Insurance and Financial Services

International Business
- Management
- Marketing
- Military Leadership
- Real Estate

Education
- Exercise Science
- Health Education
- Human Services Counseling
- Merchandising
- Recreation and Tourism Studies
- Therapeutic Recreation Specialization
- Recreation and Tourism Management Specialization
- Secondary Education
- Special Education
- Speech-Language Pathology and Audiology
- Sport Management
- Technology Education
- Training and Development

Engineering and Technology
- Civil Engineering
- Civil Engineering Technology—Construction
- Civil Engineering Technology—Geomatics
- Computer Engineering
- Electrical Engineering
- Electrical Engineering Technology
- Engineering Management
- Environmental Engineering
- Global Engineering
- Mechanical Engineering—Aerospace
- Mechanical Engineering—Mechanics
- Mechanical Engineering—Thermal Sciences
- Mechanical Engineering Technology
- Military Leadership
- Modeling and Simulation
- Motorsports Engineering

Health Sciences
- Community Health
- Environmental Health
- Gerontology
- Medical Technology
- Occupational Safety

Sciences
- Biochemistry
- Biology
- Chemistry
- Computer Science
- Geology
- Mathematics—Actuarial Mathematics Option
- Mathematics—Applied Mathematics Option
- Mathematics—Statistics/Biostatistics Option
- Oceanography
- Physics
- Psychology

Graduation Information
Application for Graduation for Undergraduate Students
Each undergraduate student must file an application for graduation for the appropriate degree.

All degree requirements must be completed no later than the last day of exams for the term in which graduation is anticipated.

Commencement ceremonies are managed through the Office of the Dean of Students. Information is posted to the commencement website at http://www.odu.edu/AO/student_serv/commencement.

The Office of the University Registrar sends an e-mail letter to all currently enrolled, degree-seeking undergraduate students who have earned at least 102 academic credits, inviting them to apply for graduation. This e-mail will be sent during September for May candidates and during February for August and December candidates. Students who expect to graduate during a specific term and who have not received a letter from the Registrar’s Office inviting application for graduation should e-mail the Registrar’s Office from their ODU e-mail account (XXX@odu.edu) and should include the following information: name, degree, major, minor or cluster, date of intended graduation, name as it should appear on diploma, and delivery instructions for the diploma.
Students will be notified of their graduation status prior to the end of the drop/add period of the expected final semester. Students planning to graduate should consult the chief departmental advisor or site director in order to ensure that requirements for the major are being met. Students who have elected a minor must consult a representative in the minor department to ensure that minor requirements are being met.

In addition to departmental academic requirements specific to the major, minor, concentration, or degree program, the following requirements must be completed prior to conferral of the degree: senior assessment and passing score for the Exit Examination of Writing Proficiency.

Students are responsible for monitoring their own progress toward degree completion and for meeting all graduation requirements. Transcripts are available for on-line review at www.leonline.odu.edu and students are encouraged to monitor the following specific requirements: General Education, foreign language, transfer work evaluation, and upper-level requirements. Students are also reminded that academic advising in the major department is extremely important to the successful completion of the degree being sought.

Completion of Requirements for Undergraduate Students

Undergraduate students may choose to graduate under the Catalog in effect at the time of their first enrollment (part-time or full-time) or any subsequent Catalog provided that the students graduate within six years from the date of the first enrollment. For example, students beginning in the fall 2004 semester may use any Catalog in effect from fall 2004 through the end of the 2010 summer session, students beginning in spring 2005 may use any Catalog in effect from spring 2005 through the end of the fall 2010 semester, and students beginning in summer 2005 may use any Catalog in effect from summer 2005 through the spring 2011 semester. If students do not graduate within this six-year period, they may choose to graduate under any Catalog in effect within the six-year period preceding the date of graduation. For example, students graduating in spring 2005 may use any Catalog in effect from spring 1999 through spring 2005, students graduating in summer 2005 may use any Catalog in effect from fall 1999 through summer 2005, and students graduating in fall 2005 may use any Catalog in effect from spring 2000 through fall 2005.

In all cases, students must have been duly admitted to the University and an academic program of study and meet all of the requirements for graduation in one catalog. Students may not “tailor make” their own degree requirements by selecting partial requirements from more than one catalog.

Graduate Credit for Old Dominion University Undergraduates

An Old Dominion University undergraduate degree-seeking student with senior standing and a 3.00 or better grade point average in the major field of study may be allowed to take for graduate credit, upon approval of the appropriate department chair and graduate program director, up to six hours of course work each semester. Graduate credit taken prior to completing the undergraduate degree will not be used to fulfill undergraduate degree requirements. The combined undergraduate and graduate hours taken during the semester must not exceed 18. The proper request form, Request of Old Dominion University Undergraduate to Take Graduate Courses, is available in the Office of the Registrar. This option is not open to undergraduate students with senior standing at institutions other than Old Dominion University.

Accelerated Degree Programs. Students enrolled in accelerated degree programs at Old Dominion University, approved by the provost and listed below, may take up to 21 hours of graduate credit which may be applied toward the undergraduate degree. Of these 21 hours of graduate credit, up to 12 can be applied toward both the undergraduate and graduate degrees, with this option being available only to those students who have satisfied all admission and continuation requirements of the specific accelerated programs. All graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, and appear on the undergraduate transcript, and be used to determine graduation with honors. Students in accelerated degree programs will be formally admitted to the graduate program following receipt of the baccalaureate degree.

Approved accelerated bachelor’s to master's degree programs are as follows.

Bachelor of Arts or Bachelor of Science to Master of Business Administration

Bachelor of Communication to Master of Arts in Humanities
Bachelor of Arts in English to Master of Arts in English
Bachelor of Arts in English to Master of Arts in Applied Linguistics
Bachelor of Arts in History to Master of Arts in History
Bachelor's in Interdisciplinary Studies (Individualized Integrative Studies) to Master of Arts in Humanities
Bachelor of Arts in International Studies to Master of Arts in International Studies
Bachelor's in Women's Studies to Master of Arts in Humanities
Bachelor’s in Engineering or Technology to Master's in Engineering
Bachelor's in Engineering or Technology to Ph.D. in Engineering
Bachelor of Science in Health Sciences to Master of Science in Community Health
Bachelor of Science in Dental Hygiene to Master of Science in Dental Hygiene
Bachelor of Science in Nursing to Master of Science in Nursing
Bachelor of Science in Biology, Chemistry or Ocean and Earth Science to Master of Science in Biology, Chemistry, Geology, or Oceanography
Academic Information for Graduate Students

This section contains policies specifically for graduate students. The following general policies for graduate and undergraduate students can be found in the Academic Information section of this Catalog: Academic Testing, Procedures for Portfolio Development, Experiential Learning Fees, Interinstitutional Study Program with Norfolk State University, Academic Common Market, Attendance Policy, System of Grading, Grade Appeals, Guidelines and Procedures for Grade Adjustments for Nonacademic Reasons, Audit Status, Registration, Summer Sessions, Course Numbering, Class Schedule Changes and Drop/Add Procedures, Administrative Withdrawal from the University, Grading Policy for Withdrawal from Classes, Transcripts, Examinations, and Graduation Information.

Graduate Admission

General Requirements for Admission

Applicants must have earned a bachelor's degree from an institution accredited by a regional accrediting body or an equivalent degree from a foreign institution. For regular admission, an applicant should have at least a 2.80 cumulative grade point average (4.00 scale) for admission to a master's program and at least a 3.00 cumulative grade point average for admission to a doctoral program. Applicants with a master's degree must have earned that degree from an institution accredited by a regional accrediting body or an equivalent degree from a foreign institution. It is important to note that individual graduate programs impose additional requirements. Prospective students should contact the appropriate graduate program directors and consult the appropriate section of this catalog for requirements.

Students who apply before completion of undergraduate work may be admitted on the condition that the bachelor's degree is received before the beginning of actual graduate studies.

Students whose backgrounds are judged to be deficient in any specific area of study or whose undergraduate grades are below the required average may be asked to make up the deficiency by taking one or more courses at the undergraduate level. No graduate credit will be given for these courses.

Standardized Tests

The Graduate Record Examination (GRE), the Graduate Management Admission Test (GMAT), the Graduate School Foreign Language Test (GSFLT), and the Test of English as a Foreign Language (TOEFL) are administered on the Old Dominion University campus on a number of testing dates throughout the year. Information and application forms are available for these tests from the testing coordinator in the Academic Skills Center.

The Miller Analogies Test (MAT) required by some programs is administered by appointment through the testing coordinator's office. Applicants should contact that office to make arrangements for taking the MAT.

Some programs require that, prior to completion of nine graduate hours, students take the Exit Examination of Writing Proficiency administered by the University's Writing Center. Graduate students in some other programs take the Graduate Writing Proficiency Examination administered and evaluated by the College of Education.

Please note that test scores are considered valid for five years except for the TOEFL, which is valid for two years. Students with test scores older than five years should contact the program director for guidance.

The Admission Decision

Only a written notice from the Office of Admissions or International Admissions, not letters from departments or faculty members, is certification of admission. Admission to graduate study may be limited by the number of places available in the various programs, colleges, schools, and departments of the University. Applicants are encouraged to apply early. The application process may span six to eight weeks depending on timely receipt of documents. After supporting credentials have been received and reviewed, applicants for admission are usually notified within 30 days of the action taken on their application.

Application Procedures

A person interested in graduate work at Old Dominion University should contact the Office of Admissions to obtain the forms and information needed for application. The applicant must complete the Application for Admission to Graduate Study (including application fee) and arrange for the submission of official transcripts from each college or university previously attended. Transcripts are not required of the nondegree applicant for initial registration, but before embarking on further graduate study beyond six hours an official copy of previous college transcripts must be submitted. Students should refer to individual program requirements and special deadlines to ensure complete processing of an application.

Application may be made to only one graduate program at a time. No provision is made at Old Dominion University for dual-program graduate study.

The completed application and supporting documents should be sent to the Office of Admissions by the following deadlines:

<table>
<thead>
<tr>
<th>Entry Term</th>
<th>Application and Credentials Deadline*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>June 1</td>
</tr>
<tr>
<td>Spring</td>
<td>November 1</td>
</tr>
<tr>
<td>Summer</td>
<td>March 1</td>
</tr>
</tbody>
</table>

Several programs, often those of a highly competitive nature, have earlier deadlines. Students should refer to individual program requirements for this information.

Types of Admission Status

Degree

Regular. An applicant who meets the University's requirement of a 2.80 undergraduate overall grade point average for admission to a master's program or a minimum 3.00 overall undergraduate or graduate grade point average for admission to a doctoral program and meets, as determined by the graduate program director, the individual program admission requirements may be admitted to regular graduate study.

Provisional. Applicants whose credentials have been received but who do not fully meet the requirements for admission as a regular graduate student may, at the discretion of the graduate program director, be allowed to enroll in a graduate program as provisional graduate students. This is normally a temporary status, which will be changed by the graduate program director to that of regular status when the student has demonstrated the ability to do satisfactory graduate work. The change in status ordinarily will take place after the completion of at least 12 hours of graduate course work in which the student has earned the average grade of B (3.00) or better and upon completion of any prerequisite work. Previous nondegree credits earned may not be included for purposes of satisfying the provisional 12-hour requirement. No student with less than a 3.00 average will be transferred to regular status. Should a provisionally admitted graduate student not qualify for regular status at this time, the student may request nondegree status. Provisional students placed in nondegree status must reapply for admission to a degree-seeking program. The Regulations for Continuance section of this Catalog applies to both provisional and nondegree students. Credits earned as a provisional student may be applied toward the fulfillment of degree requirements. Credit earned while in nondegree status is subject to the limitations described below for nondegree admission.

Nondegree

Applicants who do not at present intend to complete a graduate degree from Old Dominion University and who possess a bachelor's degree may, at the discretion of the graduate program director, be permitted to register for undergraduate or graduate-level course work as nondegree graduate students. Transcripts from each college or university previously attended are required before the completion of six graduate credit hours. Nondegree graduate students are required to provide proof of college graduation via official transcripts prior to registering for a second semester. Graduate work taken as a nondegree student carries full graduate credit, but does not necessarily apply toward a degree at Old Dominion University.

No more than 12 hours of graduate-level course work taken as a nondegree student may be applied toward a graduate degree or certificate. Nondegree graduate credit falls under the same rules as transfer graduate credit from other institutions; thus, a limit of 12 semester hours (fewer in some programs) including nondegree credits, may be applied toward fulfillment of degree requirements. If the student is later admitted to a degree program, the graduate program director in the field will determine which of

* These deadlines are subject to change. Please consult the most recent application for up-to-date information.
the courses, if any, up to 12 hours, may be applied toward the degree. A nondegree student has no guarantee that work completed in this category will be accepted, and if interested in becoming a degree candidate, the student should make certain that all necessary credentials, including test scores, are submitted as soon as possible.

Policy on Six-Hour Advisory and 12-Hour Registration Holds for Nondegree Graduate Students

All nondegree graduate students who have completed six credit hours of graduate courses will receive an “advisory” notice upon attempting to register for additional graduate courses. This notice will advise the student to contact the Office of Graduate Studies to obtain counseling and recommendations. This “advisory” notice will not prevent registration.

All nondegree graduate students attempting to register for additional graduate courses and who have completed or will exceed 12 credit hours (13 credit hours for certain military programs) will be blocked from registering. To remove this registration block, a student must contact the Office of Graduate Studies for advice on gaining admission into a graduate program or to receive written permission from the dean of graduate studies to take additional hours as a nondegree student.

Students seeking graduate courses for licensure, certification or professional development (e.g., Virginia Department of Education “endorsements”) will not receive the advisory notice and will be exempt from the registration block.

Financial Aid for Graduate Students

Financial resources are available to assist Old Dominion University graduate students with their educational costs. Most stipends awarded to graduate students are insufficient for meeting all living expenses; therefore, other sources of income are necessary. Financial aid sources for graduate students typically include teaching and research assistantships, tuition grants, Federal Direct Stafford Loan Programs, and part-time student employment. Additional information about need-based financial assistance is available from the Office of Student Financial Aid.

Prospective graduate students should also consider applying for national fellowships, such as those awarded by the National Science Foundation, the Woodrow Wilson National Fellowship Foundation, the Ford Foundation (minority fellowship program), and the Danforth Foundation. Applicants should check program deadlines, some of which are as early as December 1. Information on fellowships in specific fields is available from the chair or program director of each department/school.

Graduate Awards

The Office of Graduate Studies coordinates the selection process for all graduate awards. The graduate program director in the student’s declared major is the key person for making the nomination to the dean of graduate studies for all graduate awards, unless another contact person or application is indicated below. For more information, contact the Office of Graduate Studies.

The Alumni Association Outstanding Scholar Fellowships were established in 1984. The fellowships are awarded to two graduate students in good academic standing who are attending Old Dominion University on a full-time basis. One fellowship must be awarded to an Old Dominion University alumnus/alumna who has been admitted as a full-time student to a graduate program at the University. Students are nominated for the award by their graduate program director and selection is made in the Office of Graduate Studies.

The Virginia S. Bagley Endowed Scholarship is made possible by Mrs. Bagley’s estate and is awarded to a graduate student in the Department of Biological Sciences. Students are selected by the graduate program director and candidate selection is forwarded to the Office of Graduate Studies.

The Nancy Topping Bazin Scholarship was established by The Friends of Women’s Studies to assist a graduate student in women’s studies. Students are selected by the director of women’s studies and candidate selection is forwarded to the Office of Graduate Studies.

The Theodore F. And Constance C. Constant Fellowships are funded by an endowment which assists two full-time graduate students in the College of Business and Public Administration. Nominations are open to all programs in the College of Business and Public Administration.

The Friends of Women’s Studies Scholarship is funded by an endowment in honor of Carolyn Rhodes for students majoring in women’s studies. Two scholarships are awarded: one to a graduate student seeking an M.A. in humanities and one to an undergraduate student. Undergraduate students must have a minimum grade point average of 3.00. Graduate students must have a minimum grade point average of 3.50. Recipients can be full- or part-time students. Students are selected by the director of women’s studies and candidate selection is forwarded to the Office of Financial Aid, scholarship coordinator. Student must demonstrate financial need. (FAFSA)

The John Albert Gay Scholarship is made possible by an endowment given by Dr. and Mrs. R. A. Gay (Florence Vaughan). This scholarship assists a graduate student majoring in special education. Preference is given to those specializing in the area of the emotionally disturbed child. The student is selected by the graduate program director and candidate selection is forwarded to the Office of Graduate Studies. Student must demonstrate financial need. (FAFSA)

The Delta Sigma Lambda-Dr. Ruth Harrell Scholarship is supported by an endowment to assist a woman who has received a bachelor’s degree and is a full- or part-time graduate student enrolled at Old Dominion University. Selection is also based upon scholastic ability, financial need and good personal character. Preference is given to those students who have lived in the Commonwealth of Virginia for at least one year. Students must also complete a separate application, which is available in the Old Dominion University Women’s Center. Delta Sigma Lambda members are eligible for the award. (FAFSA) (757-683-4109)

The Hampton Roads Maritime Scholarship is funded by an endowment from the Hampton Roads Maritime Association and is given to a graduate student in the Ocean, Earth and Atmospheric Sciences Department. Students are selected by the department chair and candidate selection is forwarded to the Office of Graduate Studies. Students must demonstrate financial need. (FAFSA)

The Gene W. Hirschfeld Scholarship is supported by an endowment given by the former chair of the Department of Dental Hygiene and Dental Assisting. The scholarship is awarded to undergraduate or graduate students who are enrolled in the dental hygiene program. Students are selected by the department chair and candidate selection is forwarded to the Office of Graduate Studies. Students must demonstrate financial need. (FAFSA)

The Peggy Wooster Hull Scholarship is made possible by an endowment given by Marie D. Wooster in memory of her daughter. It is awarded to a full-time doctoral student in education. Students are selected by the graduate program director of the Ph.D. in Urban Services program. Candidate selection is forwarded to the Office of Graduate Studies. Students must demonstrate financial need. (FAFSA)

The Neil and Susan Kelley Endowed Scholarship was established by Neil Kelley in 2001. This scholarship provides financial support to a graduate student pursuing a master’s in oceanography. The scholarship is awarded strictly on merit and may be renewed annually. Students are selected by the department chair and candidate selection is forwarded to the Office of Graduate Studies.

The Frank Hill Knecht Memorial Scholarship is made possible by an endowment given by Lena Rosa K. Conley, an alumna and retired staff member of Old Dominion University, in memory of her brother. This scholarship assists a full-time graduate student in education. Preference is given to study in the area of special education. Students are selected by the department chair and candidate selection is forwarded to the Office of Graduate Studies. Students must demonstrate financial need. (FAFSA)

The Meredith Construction Company Scholarship is made possible through an endowment given by the Meredith Construction Company, Inc., Meredith Realty, et al. and members of the Meredith family. The award is given to a graduate student demonstrating academic merit in his/her chosen curriculum. Students are nominated by the graduate program director and selection is made in the Office of Graduate Studies.

The Harvey Ronald Saunders Memorial Endowed Scholarship, was established by Mr. And Mrs. Louis M. Saunders to assist an undergraduate or graduate student majoring in the arts/fine arts with an emphasis in painting or drawing. The recipient must have a 3.00 minimum grade point average, demonstrate financial need and be a citizen of either the United States or Israel. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO, FAFSA) (757) 683-4047

Graduate Assistantship Guidelines

Teaching and research assistantships are available to full-time graduate students who meet the requirements listed under the Graduate Assistantship Guidelines. Stipends vary by program and college.

Graduate Assistantship Guidelines

A. Nature of the Graduate Assistantship
The graduate assistant is expected to participate directly in either instructional, research, or administrative duties in support of the ongoing activities of the University's academic, research, and service units. The appointment is intended to be a learning experience for the graduate student and to facilitate the completion of degree requirements, help the student prepare for a professional career, and support the teaching, research, and administrative needs of the institution.

It is the University's intention to make the assistantship an integral and valuable part of the student's graduate education. It should be viewed as an apprenticeship in teaching, research, or administrative service.

B. Categories of Graduate Assistants

1. Graduate Teaching Assistant (GTA)—The appointee is expected to participate directly in teaching activities, such as the teaching of a course or holding responsibility for a laboratory section, or to be assigned to specific instructional support or related activities.

2. Graduate Research Assistant (GRA)—The appointee is expected to participate directly in research or support activities conducted by faculty members or administrators. There are three sources of funding for GRAs: those funded through Commonwealth sources, those funded by local funds, and those whose stipends are paid by the Old Dominion University Research Foundation (ODURF) from grants and contracts.

C. Application
Application forms for graduate assistantship stipends paid by the University (GTAs and GRAs) are available from the Office of Admissions or from the University's web page. The completed form, together with a brief essay by the applicant discussing academic interests and career objectives, should be submitted to the appropriate graduate program director or office making the appointment as soon as possible for fullest consideration.

Applications for GRA positions funded through ODURF are made through the faculty member who is principal investigator, the department chair, or graduate program director.

Old Dominion University is an affirmative action, equal opportunity employer.

D. Eligibility

1. Only students admitted to graduate degree programs in regular or provisional status on the basis of complete and fully evaluated credentials and in good academic standing are eligible for appointment as graduate assistants. Additional criteria apply for appointment as a graduate teaching assistant (see next page).

A passing score on the SPEAKtest is 50. Students scoring 45 will have an additional communication evaluation during the required interview.

2. All students appointed as graduate assistants are required to verify their identity and employment eligibility and complete an I-9 Form, according to University procedures, prior to commencing their duties. This requirement is established in order to comply with the Immigration Reform and Control Act of 1986. Students are also required to complete the Child Support Disclosure and Authorization Form, the Commonwealth of Virginia's Policy on Alcohol and Other Drugs Form, and the Commonwealth of Virginia Selective Service Form.

E. Appointments

Appointments of graduate assistants are generally made for a period of one academic year with a nine-month performance period. Nominations should be received not later than 30 days before the semester of employment in order to assure adequate time for processing. Normally, appointments require 20 hours per week of service. Graduate assistants will receive pay checks on a semi-monthly schedule. An assistant funded through a grant or contract may be appointed for shorter periods if required by the conditions of the grant or contract.

Appointments may be divided between teaching and research duties with the approval of the dean of the appropriate academic college. Such an appointment should not normally exceed the equivalent of a half-time assistantship.

A graduate assistant appointment may be renewed upon nomination, review of qualifications, and satisfactory previous performance.

F. Termination

A graduate assistantship normally ends when the period of appointment is concluded and the terms of the assistantship agreement are fulfilled. Otherwise, a graduate assistant may be terminated for the following reasons:

1. Resignation by the student. Resignation shall be in writing to the supervisor with a copy to the appropriate department chair, program director, and academic dean or equivalent administrator.

2. Failure of the student to perform his or her assigned duties adequately. Termination must be recommended by the student's supervisor and approved by the department chair, graduate program director, and the appropriate academic dean or equivalent administrator.

3. Failure of the student to remain in good academic standing in accordance with the graduate continuation regulations.

4. Failure of the student to maintain enrollment in the requisite number of graduate credits.

5. Expiration of a grant or contract that funds the student's stipend.

Any overpayment must be reimbursed to the University by the student as soon as possible after termination. Failure to repay the amount owed may result in legal action against the student for recovery.

If a student resigns from an assistantship or is terminated for reasons other than the completion of the appointment or expiration of the funding contract, the department chair or graduate program director should notify the appropriate academic dean or administrator as soon as possible.

ACADEMIC INFORMATION FOR GRADUATE STUDENTS 65
nominate a replacement if necessary.
A student who believes that he or she may have been unjustly terminated may appeal the decision. First, the student should meet with the supervisor, graduate program director, and department chair in an effort to resolve the situation. If this effort fails, the student may make an appeal in writing to the dean or administrator of the appropriate academic college. If the matter is not resolved, it will be referred to the dean of graduate studies who will automatically refer the matter to the Graduate Appeals Committee for review. The committee will make its recommendation to the dean of graduate studies who then makes the final decision.

G. Stipend
Annual minimum stipend amounts for GTAs and GRAs are established by the Office of Graduate Studies. Research assistants paid through ODURF from grants or contracts may not be paid at a lower rate. Students should consult their graduate program directors for current stipend amounts.
Departments/schools and/or academic colleges may supplement graduate assistant stipends from other funds available to them. All supplements must be awarded according to previously approved departmental/school or college policy. Departments/schools may change the amount of the stipend above the minimum upon approval of the appropriate academic dean.
In the event of late appointment or termination, the stipend will be prorated on the basis of the nine-month performance period. Compensation will commence on the date of appointment and end on the date of termination.
GRAs funded by grants or contracts administered through ODURF may be paid at a higher rate than those funded from Commonwealth sources.
The stipend is considered to be taxable income since it is payment for services.

H. Tuition Assistance
(UNFUNDED SCHOLARSHIPS, SPONSORED RESEARCH GRANTS)
Graduate students who are employed as graduate assistants and receiving financial support to pursue graduate degrees at Old Dominion University may receive partial to full tuition assistance. In order to be eligible to receive full tuition assistance, graduate students must be enrolled in and complete at least six hours of graduate course work each semester and three in the summer.
To continue receiving tuition assistance, graduate students must be supported for at least one half of the semester and receive at least $2,500 in support per regular semester or $1,334 during the summer. A doctoral student who has successfully passed the Candidacy Examination and needs only to complete the dissertation must be awarded for at least one half of the stipend of dissertation (899) to be eligible for full tuition assistance.

I. Outside Employment
Graduate assistants are not permitted to accept outside employment during the period of their appointment, except under unusual circumstances and only with the approval of the dean of the appropriate academic college and the approval of the appropriate graduate program director and department/school chair. In any case, outside employment permitted as an exception to the general policy should normally not exceed 20 percent of the maximum workload.
The prohibition on outside employment includes additional employment by the University. In particular, graduate teaching assistants should not be paid for part-time teaching for the University in addition to their normal responsibilities.

J. Enrollment and Registration Requirements
Assistantship recipients are required to be enrolled each semester of their appointment and must register for and complete a minimum of six hours of course work per semester for graduate credit or three hours in the summer; doctoral students who have successfully passed the Candidacy Examination and need only to complete the dissertation must register for at least one half of dissertation (899) to be eligible for full tuition exemptions. Graduate Form 28 (1-Hour ABD Notification for Graduate Assistant) must be completed and sent with the E-1S payroll form to the Office of Graduate Studies. This must not be construed to mean a change in the degree requirements in order to graduate. Students are still required to complete all of the credit hours as listed in the individual department sections necessary for the degree. Undergraduate prerequisite courses and courses taken for audit are not normally counted toward the enrollment requirement, except upon the recommendation of the program director, department/school chair, and the dean of the appropriate academic college and the approval of the dean of graduate studies.
Graduate assistants normally may not enroll for more than nine credit hours per semester. Enrollment for 10 to 12 credit hours requires the approval of the appropriate program director. No graduate assistant will be permitted to enroll for more than 12 credit hours in any semester an appointment is held.
The Board of Visitors has authorized the president or his or her designee, the dean of graduate studies, to consider waivers related to the minimum enrollment requirements specified above.

K. Description of Responsibilities
All graduate assistants shall be provided with a written job description of their responsibilities by their supervisors.

L. Workload
A graduate assistant shall be assigned teaching, research, or other duties and associated responsibilities that will normally require 20 hours per week on average. For a GTA, the work load should include at least six hours of classroom teaching or nine contact hours of laboratory supervision per semester, plus normal preparation time.

M. Evaluation and Monitoring
A graduate assistant's performance shall be evaluated at least once during the period of the award, preferably before the end of the first semester of service is completed, by the faculty member or administrator to whom the graduate assistant is assigned. The evaluation shall be discussed with the assistant and a copy forwarded to the appropriate graduate program director, chair, and dean of graduate studies.

N. Summer Appointments
Graduate assistants appointed for the summer shall be paid at a rate comparable to the stipend received by the student during the semester. To be considered for a partial or full tuition exemption in the summer, a graduate assistant must receive a stipend not less than $1,334.

O. Procedures for Allocation of Graduate Assistantships
1. The dean or other appropriate administrator notifies the individual departments/schools or units of their allocation of assistantships for the coming year.
2. The department/school or administrative unit recommends candidates for the assistantships to the appropriate academic dean or administrator. Candidates should be interviewed before final recommendations are made for appointment. Particular care should be taken in the consideration of applicants to determine the adequacy of academic preparation and language skills. A completed E-1S form or ODURF Form 108 for all graduate assistant appointments will accompany the candidate’s nomination to the dean or administrator. All completed E-1S forms with award letters, acceptance forms and job descriptions are to be sent to the Office of Graduate Studies for processing. ODURF 108 forms are to be sent to the Old Dominion University Research Foundation. Prior to submission of a nomination, the department/school should determine whether the student has been nominated for or accepted by another graduate assistantship.
3. Graduate assistant nominations are reviewed and approved by the dean of the academic college or equivalent administrator to insure that applicants meet the eligibility criteria for appointment, such as admission to a degree program, English language proficiency requirements, good academic standing, and enrollment, and that the appointment is in compliance with applicable University and college policy.

P. Splitting Graduate Assistantships
Graduate teaching and research assistantships may be divided in half. If so, each individual will receive a minimum of one-half of the stipend. A student holding a one-semester split assistantship is required to work 20 hours per week. A student holding a one-year split assistantship is required to work 10 hours per
Q. Graduate Teaching Assistants

1. All students who are to be appointed as graduate teaching assistants are required to attend and satisfactorily complete the Graduate Teaching Assistant Institute. Unless the graduate assistant has completed the Institute, he or she will not be eligible to receive a GTA stipend or to work as a GTA including any of the following activities: teach a course, supervise either a laboratory or discussion/recitation section, provide supplementary instruction in large lecture section classes independently, or assist an instructor with his or her teaching. The Office of Graduate Studies will keep records of the students who have completed the Institute and will inform the appropriate departments of a particular student's eligibility for a teaching assignment.

The Institute is offered twice a year during the week before fall and spring classes begin. All graduate assistants, including those who have research and/or other non-instructional assignments, are encouraged to participate in the Institute in anticipation of future teaching assignments and in preparation for becoming a classroom instructor.

Departments are encouraged to develop their own programs for training graduate teaching assistants. Such programs should be tailored to the specific needs of the discipline and department policies.

2. Applicants for GTA appointments must demonstrate written and oral fluency in the English language. For international students, a good command of written English will be evidenced by acceptable TOEFL scores and required entrance essays. Oral proficiency in English will be determined through the SPEAK test administered by Old Dominion University's English Language Center personnel. A passing score on the SPEAK test is 50.

Students who marginally fail the SPEAK test with a score of 45 will be offered the opportunity to participate in a re-test as a part of the GTA Institute to determine if face-to-face communication is sufficient for holding a teaching assistantship. These students will attend the regular sessions of Day 1 of the Institute (unless they previously attended the GTA Institute). Their presentation portion of the Institute will be made in a designated session of re-test students with a special evaluation panel. The evaluation panel will consist of one representative of the English Language Center (ELC), selected by the director of the ELC, one faculty member, chosen by the dean of graduate studies, and one Honors College student, chosen by the dean of the Honors College.

Each presentation will be evaluated. A passing score will be 20 out of a possible 30 points. For each student, the scores from each panel member will be reviewed by the panel and a recommendation and all score sheets will be sent to the dean of graduate studies who will make final decisions and notify the students of the results. Students who do not pass the SPEAK retest will be given remedial recommendations by the evaluation panel and allowed to participate in the retest session at the next GTA Institute.

Students appointed as graduate teaching assistants and who will have primary responsibility for teaching a course for credit and/or assisting final grades for such a course must be under the direct supervision of a regular faculty member experienced in the teaching field, receive regular in-service training, be regularly evaluated, and have earned at least 18 graduate semester hours in the teaching field. These requirements do not apply to graduate teaching assistants who are assigned responsibilities such as laboratory assistant, teaching physical education activities, attending or helping to prepare lectures, grading papers, keeping class records, and conducting discussion groups.

Departments using graduate teaching assistants are required to conduct the following individual graduate teaching assistant instructional evaluations during the initial semester of appointment and at least once a year thereafter.

a. Initial In-Class Visit: The department chair or his/her designee (preferably an acknowledged master teacher who could be assigned appropriate teach-load based on this activity) will attend representative recitation, laboratory or lecture class(es) at the earliest possible time.*

b. Evaluation of Instructional Quality:

The evaluator will conduct an oral evaluation of his/her presentation indicating strengths and weaknesses.

c. Preliminary Written Evaluation:

At the time of the oral evaluation, a brief written evaluation will be given to the teaching assistant and forwarded to department files, discussing as a minimum: (a) subject content, (b) communication skills, (c) overall teaching effectiveness, and (d) suggestions for improvement.

d. Evaluation:

At some point after mid-term, the evaluator may wish to make a follow-up visit to the graduate assistant's class(es).** After that visit, the evaluator will make an official written evaluation of teaching effectiveness, forwarding that evaluation to the department chair and to the dean. The evaluation will state whether overall teaching effectiveness was judged to be: (A) Exceptional, (B) Meets Expectations or (C) Needs Improvement, with explanations to justify the evaluation in all of the categories.

The dean of the academic college or equivalent administrator shall review and monitor the eligibility, registration, and activities of graduate assistants as reported by the department/school, the individuals receiving the awards, and information as available from student records, in order to ensure that they are in compliance with University policy. The dean of graduate studies may also review the assistantship program on an annual basis.

5. Recognition of Graduate Teaching Assistant Performance

Each academic year, two graduate teaching assistants will be recognized for their outstanding performance as a classroom or laboratory instructor. Recipients of the Outstanding Teaching Assistant Awards will receive a $1,000 financial award to be used to support their educational expenses.

Nomination and Selection Process:

After the fall semester's student evaluation forms have been received and collated, each department using graduate teaching assistants can nominate GTAs for the Outstanding Graduate Teaching Assistant Awards. The departments forward their nominations to their dean, within 30 days of distribution of the fall semester student evaluation data. The nomination package shall include: (1) a letter of nomination from the GTA's department chair or mentor; (2) two sets of written teaching evaluations; (3) compilations of all of the GTA's student evaluations; and (4) any other supporting material deemed appropriate by the nominator. Each college should form a GTA judging committee, made up of GTA evaluators who have been nominated by their departments and selected by their dean. Departments that do not use graduate teaching assistants can nominate master teachers to serve on the college committee. That committee will meet within two weeks of the dean's appointment.

* If the graduate assistant is judged to have inadequate language communications skills, remedial action must be taken. Each department is expected to evaluate the verbal communications skills of prospective instructors prior to the start of classes. Unexpected difficulties must be handled without delay.

** The follow-up visit should be made for GTAs who were evaluated as performing poorly on the first visit or for further evaluations of GTAs being considered for a teaching award.
select nominees for both recognitions, and elect a college representative to serve on the actual university selection committee.

A University selection committee, made up of graduate program directors from each college, will meet early enough during the spring semester so that the outstanding graduate teaching assistants can be recognized at the Faculty Awards Dinner. Graduate teaching assistants will be eligible for selection based on teaching during the spring, summer, and fall sessions (in that order). Outstanding teaching assistant recognitions by colleges and University Outstanding Graduate Teaching Assistant recognitions may be added to the graduate student’s official transcript, if possible, and they should receive an appropriate certificate to commemorate their achievement. In the event that a graduate teaching assistant has completed his or her degree before selection, an alternate recognition award will be made.

Academic Advising for Graduate Students

All students who have been admitted in regular or provisional status to graduate degree programs must have the advisor block lifted prior to registration each semester. Registration for graduate courses in engineering and business requires departmental approval. Students should consult with their advisors to discuss their programs of study and to schedule appropriate courses in advance of registration whenever possible.

Nondegree graduate students should seek advice from the department/school offering the course, or, if registering for engineering or business courses, permission of the department/school.

All nondegree graduate students who have completed six credit hours of graduate courses will receive an “advisory” notice upon attempting to register for additional graduate courses. This notice will advise the student to contact the Office of Graduate Studies to obtain counseling and recommendations. This “advisory” notice will not prevent registration.

All nondegree graduate students attempting to register for additional graduate courses and who have completed or will exceed 12 credit hours (13 credit hours for certain military programs) will be blocked from registering. To remove this registration block, a student must contact the Office of Graduate Studies for advice on gaining admission into a graduate program or to receive written permission from the dean of graduate studies to take additional hours as a nondegree student.

Students taking graduate courses for licensure, certification or professional development (e.g., Virginia Department of Education “endorsements”) will not receive the advisory notice and will be exempt from the registration block.

Students should consult the Guide to Enrollment issued by the Office of the Registrar each semester for the most current advising and registration policies.

Graduate Student Exchange Policy Between the College of William and Mary and Old Dominion University

The registrars at Old Dominion University and the College of William and Mary will each register students in all departments in the College of Sciences (Old Dominion) and the School of Marine Science (William and Mary) for courses at the other institution. If the student presents a properly signed form listing the course(s) to be taken at the other institution, the exchange will be honored in both regular sessions and in summer sessions, and will apply to graduate students at the master’s and doctoral levels at both institutions. The students must have completed all prerequisites of the courses for which they register. All credit so earned will be considered as resident credit at the home institution for degree purposes. (Courses taken at EVMS under this policy will be considered the same as Old Dominion University courses; all other courses are subject to transfer credit policy limitations.)

Tuition and fees applicable to the courses taken will be handled according to current interinstitutional policies regulating these.

Education and Training Management Subspecialty (ETMS)

The Education and Training Management Subspecialty (ETMS) interinstitutional agreement provides active-duty Navy officers with an opportunity for graduate education at the master’s level in accordance with the requirements of the Navy’s ETMS program. Participants in this agreement are the Naval Education and Training Command and the following institutions of higher education: George Washington University, Memphis State University, Old Dominion University, San Diego State University, George Mason University, and the University of West Florida. These higher education institutions provide a common curriculum that satisfies competency areas as set forth by the Navy for the ETMS program. Officers participating in the program are enrolled in the Master of Science in Education degree program with a major in educational administration.

Navy Education Consortium

A consortium of higher education institutions, located near major naval facilities, has developed a means to enhance the opportunities for active duty naval officers to participate in graduate education at the master’s level. The institutions are Old Dominion University, George Washington University, Memphis State University, The University of Rhode Island, San Diego State University and the University of West Florida. The program areas which may be offered under the auspices of the consortium include international and political studies, computer information sciences, and computer science. The consortium will include the Education and Training Management Subspecialty (ETMS) program. For current information, contact the Office of Academic Affairs.

Graduate Writing Proficiency Policy

Each graduate department or program will develop specific policies and procedures for evaluating and, if necessary, upgrading student writing.

Graduate Student Registration Requirement

Master’s, Education Specialist, and Pre-candidacy Doctoral Students. Students who have completed all course work but are working during a given semester to complete other outstanding degree requirements (e.g., comprehensive examination, thesis, removal of an I or II grade) or wish to use University facility and/or consult with faculty must be registered for at least one credit during that semester. Graduate students must be registered for at least one credit hour in the semester in which they graduate. GRAD 999 or the program equivalent may be used to fulfill this requirement.

Registration for GRAD 999 or the required program equivalent is subject to the normal fees and regulations of the University.

Doctoral Students After Passing Candidacy Examination. After successfully passing the candidacy examination, all doctoral students are required to be registered for at least one graduate credit hour each term (fall, spring, and summer) until the degree is completed, including the semester in which they graduate. Failure to comply with this requirement will result in charges to the student’s account for one graduate credit hour plus required fees for each semester after passing the candidacy examination. Students are not eligible for graduation until all charges are paid.

Graduate Student Exchange Policy Between EVMS and Old Dominion University

The registrars of Old Dominion University and Eastern Virginia Medical School will each register a student for courses at the other institution if the student presents a properly signed form listing the course(s) to be taken at the other institution. The exchange will be honored both in regular sessions and in summer sessions and will apply to graduate students at the master’s and doctoral levels at both institutions. The students must have completed all prerequisites of the courses for which they register. All credit so earned will be considered as resident credit at the home institution for degree purposes. (Courses taken at EVMS under this policy will be considered the same as Old Dominion University courses; all other courses are subject to transfer credit policy limitations.)

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Doctoral Students After Passing Candidacy Examination. After successfully passing the candidacy examination, all doctoral students are required to be registered for at least one graduate credit hour each term (fall, spring, and summer) until the degree is completed, including the semester in which they graduate. Failure to comply with this requirement will result in charges to the student’s account for one graduate credit hour plus required fees for each semester after passing the candidacy examination. Students are not eligible for graduation until all charges are paid.
Graduate Pass/Fail Policy

Master’s-level students may include pass/fail-graded experiences to fulfill a portion of their program requirements provided that they meet a University requirement of 24 credit hours of course work, of which at least 18 hours must be letter-graded course work, and any additional departmental or school requirements. The college, school and/or department administering the program shall determine which student course work shall be considered for pass/fail credit.

Doctoral students must take dissertation credit as pass/fail and may select from among the designated pass/fail-graded experiences a portion of their program requirements, provided that they take a minimum of 24 credit hours of letter-graded course work, of which at least 18 hours must be letter-graded course work, beyond the master’s degree, or equivalent, and meet any additional departmental or school requirements.

Deans may, at their discretion, designate courses as pass/fail, letter graded or both.

A student electing the pass/fail option for a particular course cannot change his or her registration and elect to take the course for grade point credit after the end of the “add” period. Similarly, courses cannot be elected as pass/fail after the end of the “add” period.

Declaration or Change of Major or Program for Graduate Students

A provisional or regular graduate student who wishes to change to a program other than the one of original admission must make the request in writing to the main campus Admissions Office or to their site director. The student’s graduate record will be examined to ascertain what, if any, other supporting credentials must be submitted (e.g., test scores, letters of recommendation) prior to consideration for admission to the new program. If it is determined that no other supporting credentials are necessary, the student’s record will be submitted to the graduate program director of the new program, with a request for consideration of admission. The student will be notified in writing of the decision. If not admitted to the new program, the student will be retained as a provisional or regular student in the original program.

When the new program requires other and/or additional supporting credentials, the student must submit these before consideration can be given to the change.

Credits earned toward a degree or certificate for the original program may or may not be accepted by the director of the new graduate program.

Conversion from Doctoral to Master’s Program

A student in a doctoral program may be converted to an appropriate master’s program in special situations. The doctoral student making satisfactory progress but wishing to leave the University may apply in writing to the new master’s program director, with copies to the current program director and the applicant’s committee. The new program director, in consultation with the current program director, will review the request following program policy and procedures.

In the case where a doctoral student fails to pass or complete a particular degree requirement, the student’s committee may recommend the student to a master’s degree program. The student will follow the procedure outlined in the preceding paragraph, except that this approach requires supporting documentation from the current committee.

Once the student is accepted, the new program director will send a memorandum and a Notice of Change of Status, Graduate Form #2, to the Office of the Registrar. The memo should clearly note which of the Old Dominion University credits and approved transfer credits may be applied to the master’s degree, and which, if any, should be reserved for future doctoral work.

Normal Course Load for Graduate Students

Every graduate program of study requires prior approval of the graduate program director or the approved faculty advisor. The minimum load for a full-time graduate student is nine graduate credit hours per semester. No more than 12 credit hours may be carried, except in unusual circumstances and with the permission of the graduate program director. In summer sessions, six credit hours constitute a full load.

Unsupported graduate students registered for fewer than nine credit hours during regular semesters or fewer than six credit hours in summer sessions are classified as part-time graduate students. During regular semesters, six credit hours is considered three-fourths time, four credit hours is half-time, and three credit hours is quarter-time. During the summer term, four credit hours is considered three-fourths time, three credit hours is half-time, and one hour is quarter-time.

Graduate students who are appointed as teaching or research assistants or whose service to the University requires approximately 20 hours per week shall register for at least six hours; doctoral assistants who have not yet passed the Candidacy Examination must register for six hours (three hours in the summer), and doctoral assistants who have successfully passed the Candidacy Examination and need only to complete the dissertation must register for at least one hour of dissertation (899) to be classified as a full-time graduate student and therefore eligible for full tuition exemption (see the Financial Aid section of this catalog).

Graduate Continuance Regulations

Administrative Withdrawal From the University

During the course of any semester, there will be situations, such as severe illness, death in the immediate family, or disciplinary actions, which will require that the University initiate an administrative withdrawal to assist a student or to implement a University-imposed sanction. The procedures that will be used are outlined in an earlier section of this catalog on Administrative Withdrawal from the University.

Notification of Academic Status

The University makes every reasonable effort to notify graduate students of their academic status. A first class letter is mailed to each graduate student placed on probation and suspension. Since communication by mail may be delayed or misdirected, it is the responsibility of every student to determine his or her academic status; graduate students may check with the Office of Graduate Studies. Nonreceipt of a letter by a suspended student will not be considered grounds for claiming eligibility to enroll for a subsequent semester or to file an appeal after the deadline.

Graduate Continuance Regulations

At the end of each semester—fall, spring, and summer—the graduate continuance director reviews records of students who do not maintain a 3.00 cumulative grade point average (GPA). Graduate students, whether degree or non-degree seeking, who do not have a cumulative GPA of at least 3.00 will be placed on probation.

Probation/Suspension Policy for Graduate Students

All graduate students receive one semester (fall, spring, or summer) of probation in the next enrolled semester after their cumulative GPA drops below 3.00. After the one-semester probation, one of three conditions exists: 1) a student regains good standing (3.00 cumulative GPA), 2) a student remains on probation for one more semester if the cumulative GPA is greater than 3.00 but the cumulative GPA is less than 3.00, or 3) a student is indefinitely suspended if the semester GPA is not greater than 3.00 and the cumulative GPA is less than 3.00.

A student who believes the probation or suspension was in error (e.g., the overall GPA does not reflect the recent removal of an I or Z grade) should contact the Office of Graduate Studies.

Reinstatement Policy for Suspended Graduate Students

All academic suspensions at the graduate level are for an indefinite period of time. Reinstatement is never automatic. Reinstatement may be permitted under certain circumstances. Graduate students suspended while in a degree-seeking program must receive approval from the graduate program director prior to seeking reinstatement to the graduate degree program. Students must make a formal appeal in accordance with the Reinstatement Policy.

A suspended graduate student seeking reinstatement must initiate the appeal by submitting a letter to the Graduate Appeals Committee via the Office of Graduate Studies. All suspension appeals will be heard promptly by the Graduate Appeals Committee. The appellant will be reinstated if the Appeals Committee finds that the suspension was inappropriate according to University regulations. If the suspension was appropriate, a minimum
of one year (starting at the end of the semester in which the student is suspended) must elapse and the following conditions must be satisfied before reinstatement is authorized:

1. The graduate program director of the program in question recommends reinstatement if the student wishes to be admitted or readmitted to a graduate degree program. The dean of graduate studies recommends reinstatement if the student wishes to be readmitted as a nondegree student.

2. The Graduate Appeals Committee decides that there is sufficient reason to predict the student's future success on the basis of (1) the recommendation of the graduate program director or dean of graduate studies as noted above, (2) the student's own statements, (3) the student's credentials, (4) mitigating circumstances that may help to explain the student's past poor performance at the graduate level, and (5) a plan recommended by the graduate program director or associate vice president for graduate studies for redressing the student's deficiency.

3. If, based on paragraphs 1 and 2 above, the committee's decision is favorable, the student will be allowed to go on to the next phase of the appeals procedure. The student will be informed prior to beginning the approved plan to redress deficiency that successful completion of this requirement will lead to reinstatement, subject to approval of the Appeals Committee. If, prior to the appeal, at least one year has elapsed and deficiencies have been satisfactorily addressed, the program director or other appropriate official making the recommendation may recommend that the time elapsed and the satisfactorily completed plan for redressing deficiency be considered as full or partial fulfillment of the above conditions.

4. When the above requirements have been completed, the student will be responsible for notifying the Graduate Appeals Committee in writing. The committee will review the record to determine whether all required conditions have been fulfilled, and upon making this determination will authorize the dean of graduate studies to notify the student of reinstatement.

If a student meets the requirements of reinstatement all courses with grades of B- (2.70) or below will be dropped from consideration in the calculation of the grade point average for continuance or graduation. These grades will remain on the student’s transcript, but the courses will not be counted toward a degree. The student must take at least one course and have at least a 3.00 grade point average following reinstatement in order to graduate. A student may be reinstated only one time. Provisions of the Reinstatement Policy may be waived only upon recommendation of the Graduate Appeals Committee and the dean of graduate studies. It is important to note that individual programs may have additional continuance policies or requirements. Students should contact the appropriate graduate program director for information.

Classification of Graduate Students

Graduate students are classified as regular, provisional, or nondegree. Classification of students will be determined at the end of each semester.

Completion of Requirements for Graduate Students

Graduate students who complete their master's or education specialist degree requirements within six years, following admission to Old Dominion University will qualify for the degree by fulfilling the requirements in the catalog in effect at the time of their first enrollment. (See military service exception under Requirements for Graduate Degrees.) Students (including part-time) who do not complete their graduate degree requirements within these time periods must project their graduation and fulfill the requirements in the catalog in effect during any of the six or eight years, respectively, preceding graduation. If a catalog other than the catalog of the year of initial enrollment is to be used, written permission of the graduate program director and dean must be obtained. Graduate students should consult their advisors to determine if any out-of-date credits may be validated by examination.

In all cases, students must have been duly admitted to the University and an academic program of study and meet all of the requirements for graduation in one catalog. Students may not create their own degree requirements by selecting partial requirements from more than one catalog.

Requirements of Graduate Assessment

Old Dominion University has developed an institution-wide plan to assess the quality of its graduate academic degree programs. In addition, students are asked to assess their experiences with support services, University administration, and other aspects of their University experience. Students will complete the assessment at the end of their graduate degree program.

Prior to the completion of degree requirements, all graduate students must complete their assessment. Students will receive advance notice of their eligibility to complete the measures, which may be accessed through the University’s site on the World Wide Web. Failure to complete the assessments normally precludes the student’s right to receive his or her graduate degree. Assessment results are used to improve student learning and the educational experience at Old Dominion University, and they do not become part of students’ records. Confidentiality is assured, as only aggregate data are reported and used in analyses.

Application for Graduation for Graduate Students

Each graduate student must file an application for graduation for the appropriate degree. All degree requirements must be completed no later than the last day of exams for the term in which graduation is anticipated.

Commencement ceremonies are managed through the Office of the Dean of Students. Information is posted to the commencement website at http://www.odu.edu/AO/student_serv/commencement

Graduate students who wish to apply for graduation should download the “Application for Graduation Form for Graduate Students” from the Registrar's website, www.odu.edu/registrar; click on “forms.” Application deadlines are published in the Guide to Enrollment and on the Registrar’s website, but typically fall during the twelfth week of classes. Students should plan to apply during the semester prior to the expected term of graduation.

Graduate students are encouraged to monitor their progress toward degree completion and to collaborate regularly with their graduate program director. In addition, graduate students must complete the Graduate Student Assessment prior to conferral of the degree.

Graduate students should refer to the “Graduate Student Registration Requirements” section in this Catalog for information regarding the continuous registration policy.

Thesis and Dissertation Procedures

Graduate students who plan to write theses or dissertations should obtain copies of the Guide for Preparation of Theses and Dissertations from the Office of Graduate Services web site for use in conjunction with any style manual preferred or required by their respective departments/schools or colleges. Minimum University requirements for the preparation of theses and dissertations are contained in the guide; departments/schools and/or colleges may set additional requirements.

Information regarding compliance with policies regulating research involving human subjects, animals, radiation, potential biohazards (e.g., recombinant DNA), lasers, controlled substances, or hazardous materials and policies regarding intellectual property can be found on the Office of Research web site at www.odu.edu/AO/research/IP-Main.htm.

All research involving human subjects, animal care and use, radiation, potential biohazards, lasers, controlled substances, or hazardous materials requires the approval signature of the appropriate review committee chair or designee, or safety officer, prior to the initiation of any research activities.

Students should be aware that in most cases, the University owns intellectual property created with University resources and can claim an interest in the intellectual property. Intellectual property must be disclosed to the Office of Research using an invention disclosure form. In order to fulfill its contractual obligations, and to adhere to the Policy on Patents and Copyrights, it may be occasionally necessary for the University to temporarily delay publication of a thesis or dissertation that contains potentially patentable information in order to ensure the availability of worldwide patent protection. Such situations would arise when a faculty member directing the research, under his/her duty as a University employee, discloses potentially patentable subject matter to the Office of Research. A student's degree requirements can still be fulfilled even though publication of the thesis or dissertation is delayed.

Presentation of a thesis or dissertation in partial fulfillment of degree requirements necessitates submission of the finished original work to the
degree planning. A student may earn a maximum of six semester hours
outside the time limit established for graduate degrees (six years for master's and education specialist degrees and eight years for doctoral degrees) must be validated by an examination before the work can be applied toward the requirements of a degree program. To be validated, the work must have been completed at Old Dominion University or be acceptable as transfer credit in lieu of an Old Dominion University course. The following procedure shall be used to validate out-of-date work:

1. The student must receive the permission of his or her graduate program director and the chair of the department/school or dean of the college in which the course is offered to validate the course credit. The form for validation of out-of-date credit shall be used to record all transactions. Graduate Form 5 must be submitted to the Registrar's Office upon completion of validation of work.
2. The graduate program director, department/school chair or dean shall make appropriate referrals to faculty member(s) (an individual or a committee) teaching the course to request that an examination be prepared and evaluated. Before the examination, the faculty member(s) shall inform the student of the area of knowledge or course content on which he or she is to be examined.
3. After the examination has been completed, the validation form shall be filled out, signed by the examining faculty member(s), and forwarded to the dean of the academic college offering the graduate degree program for approval.
4. Copies of the completed form shall be sent to the student, the graduate program director, and the university registrar.
5. Validation for any given course can be sought only once.

Experiential Learning Credit Options at the Graduate Level

Old Dominion University offers a program for assessing college-level knowledge gained through work and life experience and self-study. Students should meet with their advisors, site directors, or distance learning representatives to determine how experiential learning credit affects their degree planning. A student may earn a maximum of six semester hours at the graduate level through the following mechanisms:

1. Knowledge-based examinations.* Upon approval of the student's graduate program director and the appropriate chair and/or dean of the college involved, a student may take a knowledge-based examination, and with a satisfactory score, receive academic credit for the course(s).
2. External examinations. Upon approval of the student's graduate program director and the appropriate chair and/or dean of the college involved, a student may submit satisfactory scores of professional examinations that are evaluated and recommended for graduate-level credit by the American Council of Education, and receive academic credit for the relevant course(s).
3. Credit for training. Upon approval of the student's graduate program director and the appropriate chair and/or dean of the college involved, a student may submit documentation of completion of professional and/or military training that is evaluated and recommended for graduate-level credit by the American Council on Education, and receive academic credit for the relevant course(s).
4. Portfolio development. Upon approval of the student's graduate program director and the appropriate chair and/or dean of the college involved, a student may develop a portfolio for a graduate-level course(s) offered by Old Dominion University to earn academic credit. Portfolios are submitted to the Office of Experiential Learning and assessed for credit by the appropriate department and/or college involved. For further details on the procedure and fees for portfolio development, see the section of this Catalog on Experiential Learning Credit Options at the Undergraduate Level.

The following regulations for experiential learning credit apply:
1. That experiential learning credit be granted upon the written recommendation of the student's graduate program director and the chair of the department/school (or designated faculty assessor) having jurisdiction over the courses involved.
2. That applicability of experiential learning credit toward a specific degree program is subject to departmental/school approval.
3. That a student may not fail a course at Old Dominion University and later receive credit for the same course through an experiential learning option.
4. That a student may not enroll in a course at Old Dominion University for credit or audit and subsequently seek credit in that course through an experiential learning option.
5. That no letter grades be entered on the student's transcript for experiential learning credit, but that this credit be treated in the same way as transfer credit with "Pass" (P) and not be counted in the student's grade point average.
6. That a student request experiential learning credit as early as possible upon admission to degree status. A student must meet with the degree program advisor and the director at the beginning of his or her academic career at Old Dominion University to determine how the experiential learning program may be applicable to the degree.
7. That satisfactory scores for knowledge-based examinations and professional examinations are determined by the appropriate department/school and/or dean of the college involved.
8. That necessary documentation for academic credit for professional training is determined by the appropriate department/school and/or dean of the college involved.
9. That no credit toward a graduate degree may be obtained by correspondence study.
10. That a maximum of six semester hours of graduate credit may be earned through experiential learning mechanisms. The six hours is included in the maximum number of graduate credits that may be transferred into a graduate program at Old Dominion University. Experiential learning credit does not count toward the University's residency requirement. The student must meet the minimum residency requirements of Old Dominion University and program requirements of the degree. The student must be aware of individual degree program requirements.
11. A student in a certificate or endorsement area may earn a maximum of six credit hours through experiential learning credit to apply to a certificate, endorsement or teacher licensure program. Experiential learning hours gained in these programs would be applicable to approved degree programs at Old Dominion University. In an approved graduate degree program at Old Dominion University, a graduate student who has earned six credit hours in a certificate or endorsement program that is applicable to the degree program has met the maximum number of experiential learning credit hours. No additional experiential learning credit may be applied to that graduate degree program.

* A fee equal to 20% of the in-state on-campus rate for graduate courses will be charged for knowledge-based examinations.
Graduate Credits by Transfer or Correspondence Study

A combined maximum of 12 semester hours of graduate credit may be transferred into a graduate degree program from the following sources: graduate credits earned as a nondegree graduate student at Old Dominion University, graduate credits earned through experiential learning credit options and graduate credits earned at another accredited institution. Exceptions are allowed in the case of an approved interinstitutional program.

Transfer credit will be given only for those courses that are certified as being applicable toward a comparable degree or certificate at the institution that offered the courses, and that were completed with a grade of B or better. Specifically, in-service courses that are established especially for groups of teachers and are not intended by the home institution to be part of a degree program will not be acceptable for transfer at Old Dominion University. Exceptions to this regulation may be made only with the approval of the graduate program director involved, the dean of the college, and the dean of graduate studies. In case of doubt, it is the responsibility of the student to show that the course in question would be acceptable toward a comparable degree at the home institution.

No credit toward a graduate degree may be obtained by examination (except through the experiential learning options noted above) or correspondence study.

A student who wishes to transfer credit earned prior to admission to a degree program at Old Dominion University must submit a special request for evaluation of transfer credits through the graduate program director to the Registrar’s Office. Following admission to the degree program, the student should obtain written permission from the graduate program director before registering for a course at another institution with the intention of transferring the credit for that course toward a graduate degree at Old Dominion University. In no case is a transfer of credit final without the signed approval of the graduate program director and the academic dean on the Evaluation of Transfer Credits Form.

Evaluation of Transfer Credits Form

In the case of a student who has changed programs of study at Old Dominion University, the graduate program director of the new program may or may not accept any previously transferred course work or work completed in the former programs.

Credits accepted for transfer from another institution will satisfy partial hour requirements, but grades earned in such courses are not calculated in the student’s overall grade point average.

Graduate courses which have been applied to satisfy requirements for one master’s or doctoral degree may not be used as credit toward a subsequent graduate degree.

No credits will be accepted toward the degree or certificate if more than six years old (eight years for doctoral application), unless properly validated by examination.

Course-Load Distribution Requirement—Graduate Students

Graduate students should take care that the major portion of their course work is selected from 600- and 700-level offerings in pursuit of the master’s degree and from 800-level offerings for an education specialist or doctoral degree. At least three-fifths of the course work must be completed at these levels, and some programs have instituted more stringent requirements. Reference should be made to the appropriate section herein, and individual questions concerning the course-load distribution should be directed to the advisor.

Additional Graduate Degrees

Graduate students may pursue an additional master’s or doctoral degree in any discipline at Old Dominion University. Such a degree must be sought subsequent to, and not concurrently with, another degree.
Requirements for Graduate Degrees

The Master’s Degree

This section specifies the minimum requirements for a master’s degree from Old Dominion University. Some colleges, schools and departments have requirements in addition to the requirements specified below for seeking a master’s degree, each master’s student accepts responsibility for the following University requirements as well as any imposed by the major department.

In order to accept the master’s degree, the student must have completed all course work or thesis and have satisfied the following requirements:

1. Degree Requirements
   - A minimum of 30 semester credits is required, including 24 semester credits in approved course work and six semester credits in research. The candidate is required to prepare and present a thesis or equivalent creative work. A final oral examination covering the research is required. A comprehensive written and/or oral examination covering the program of study may be required.

2. Nonthesis Option
   - A comprehensive written and/or oral examination covering the program of study is required.

3. Thesis Option
   - A comprehensive written examination and/or oral examination covering the program of study is required.

4. Examination
   - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

5. Nonthesis Option
   - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

6. Thesis Option
   - A comprehensive written examination and/or oral examination covering the program of study is required.

7. Examination
   - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

8. Nonthesis Option
   - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

9. Thesis Option
   - A comprehensive written examination and/or oral examination covering the program of study is required.

10. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

11. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

12. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

13. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

14. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

15. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

16. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

17. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

18. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

19. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

20. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

21. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

22. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

23. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

24. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

25. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

26. Nonthesis Option
    - A minimum of 30 semester credits of approved course work is required, including one or more courses at the conclusion of study that deal directly with special topics or training related to current problems or research in the discipline. A comprehensive written and/or oral examination, or an approved equivalent, on the program of study is required.

27. Thesis Option
    - A comprehensive written examination and/or oral examination covering the program of study is required.

28. Examination
    - The examination tests the candidate’s command of a comprehensive body of knowledge and ability to perform productively in the field of study. All master’s degrees require a minimum of 30 semester hours of graduate credit. No more than 12 credit hours taken at other institutions may be counted toward a master’s degree at Old Dominion University. All requirements for a master’s degree must be completed within a six-year period. Exceptions to these limits must be approved by the graduate program director, the college dean, and the dean of graduate studies. Academic credits older than six years at the time of graduation must be validated by an examination before the work can be applied to a master’s degree. See the “Policy on Validation of Out-of-Date Graduate Credit.” Students whose graduate study is interrupted by military service will be granted an extension of time for the period of their military service, not to exceed five years.

The Education Specialist Degree

The Education Specialist degree (Ed.S.) normally is granted at the end of the sixth collegiate year of study and as such falls between the
master’s degree and the doctorate in time; however, it is not necessarily viewed as intermediate between the two degrees. The education specialist degrees provide advanced professional preparation for various positions in education.

For admission to an education specialist program, the University requires a master’s degree from an accredited institution and a minimum grade point average of 3.00. Some programs have additional requirements such as a minimum Graduate Record Examination (GRE) aptitude score, grade point average, and graduate courses in specific areas.

The education specialist degree requires a minimum of 30 semester hours of graduate credit beyond a master’s degree. A program may range from 30 to 39 hours, depending on the background and needs of the student. All requirements for the degree must be completed within a six-year period. Students must pass a written comprehensive examination and satisfy research requirements. Specific course requirements are found in the appropriate section of this catalog.

The Doctoral Degree

Old Dominion University offers three doctoral degrees: Doctor of Physical Therapy (D.P.T.), Doctor of Psychology (Psy.D.) through the Virginia Consor-
tium Program in Clinical Psychology, and Doctor of Philosophy (Ph.D.).

Doctor of Physical Therapy

Old Dominion University offers a professional doctorate degree in physi-
cal therapy that provides individuals with the knowledge, skills, and clinical internship experiences required to sit for licensure in any jurisdiction in the United States. This curriculum is comprised of a series of required didactic and clinical education courses prescribed in a specific sequence that offers students the knowledge, professional skills and competencies necessary for entry into the practice of physical therapy. In the place of a dissertation, each student is required to develop a selected case study based upon the observations of a patient examined and treated during one of the clinical internships, a research proposal, and a research project with platform and poster presentations. In addition to satisfactorily completing the didactic and clinical education curriculum, students must pass both written and oral comprehensive examinations prior to graduation.

The curriculum consists of 117 credit hours over a three-year, nine-semester period of time including summers. There are five full-time clinical internships in the three years of study totaling 40 weeks. For details on admission and program requirements see the School of Physical Therapy section of this catalog.

Doctor of Psychology

The Department of Psychology participates in a program that awards the Doctor of Psychology in clinical psychology. The emphasis of the program is on the training of highly skilled clinicians who will work in those areas of society where mental health care needs are not being met by the present system. The program is fully accredited by the American Psychological Association. The program consists of a minimum of four years of post-baccaulaurate training. The curriculum involves a specific sequence of required courses to ensure mastery of the knowledge and skills necessary for professional competence. The first two years (six semesters) provide for an intense program of basic behavioral science and clinical courses and practica. In the third year, course work includes technology in mental health care administration, practica, and concentration courses. The other main activity is the doctoral dissertation. The one-year full-time clinical internship is completed during the fourth year. For details on admission and program requirements, contact the Virginia Consortium Program in Clinical Psychology Office, Pembroke Two, Suite 301, 287 Independence Blvd., Virginia Beach, Va 23462; telephone: (757) 518-2550.

Doctor of Philosophy

Programs leading to the Ph.D. are designed to help superior students develop the capability to become creative leaders in their chosen fields. The degree is awarded upon mastery of the subject area, the develop-
ment of appropriate research skills, and a concentration of knowledge in the field of specialization.

It is important to recognize that the attainment of this degree is not a matter of accumulating course credits and satisfying residency and language or research skill requirements, even though minimum requirements for these categories are set forth by the University. The final basis for granting the degree shall be the candidate’s knowledge of the field of study and his or her demonstrated ability to do independent, original, scholarly research.

Each graduate program is responsible for setting out the requirements and procedures appropriate to its area of study. The requirements and regulations are set forth below as the minimal requirements established by the University. Students also are obligated to meet all additional requirements established by the appropriate graduate program.

Prerequisites for Admission. The applicant must complete the appropriate application for admission, submit official transcripts of all college- or university-level work, and supply letters of recommendation and official results of test scores as specified by the individual program. Baccalaureate and postbaccalaureate work must reflect superior performance.

Minimum Requirements. Minimum degree requirements for the Doc-	or of Philosophy, which must be considered in preparing the preliminary plan of study, are:

- satisfactory completion of at least 48 semester hours of post-
master’s course work, including the dissertation or equivalent level of performance course work;
- demonstrated competency in research skills as required by the specific graduate program;
- the passing of written and oral candidacy examinations at the end of the program of course work;
- the completion of a dissertation representing independent, original research worthy of publication in a refereed scholarly journal; and
- the successful oral defense of the dissertation before an appropriately selected committee of faculty knowledgeable in the field of the dissertation research.

Time Limits. All requirements for a doctoral degree must be completed within eight calendar years from the date of beginning the initial course following admission to the doctoral program. Exceptions to these time limits must be approved by the graduate program director and the college dean. Academic credits older than eight years at the time of graduation must be validated by an examination before the work can be applied to a doctoral degree. See the “Policy on Validation of Out-Of-Date Graduate Credit.” Students whose graduate study is interrupted for military service will be granted an extension of time for the period of their military service, not to exceed five years.

Program Advising. After receiving admission to a doctoral program and enrolling, the student consults with the appropriate graduate program direc-
tor about initial course work. Before completion of nine semester hours, the graduate program director, in consultation with the student, will propose a program advisor or advisory committee. The advisor or advisory committee members must be certified for graduate instruction, and will continue to serve until the student has completed the candidacy examination successfully and the dissertation committee has been formed.

Plan of Study. Before completion of nine semester hours, the student shall prepare a plan of study with the aid and approval of the advisor or advi-
sory committee. The plan of study also should be approved by the graduate program director to ensure that it meets established requirements. Failure to present the plan on time may prolong the period of study for the degree. Before drawing up and approving the plan the graduate program director should verify that there is on file a set of transcripts of all undergraduate and graduate work the student has taken. When appropriate, a diagnostic examination also may be used in developing a plan of study.

The successful completion of all work indicated on the approved plan of study is a fundamental prerequisite to the granting of the degree.

Residence. An essential feature of doctoral study is the provision of total concentration on the field of study for significant periods of time. Students who wish to pursue a part of their doctoral study on a part-time basis may do so, but all doctoral students shall spend at least two semesters engaged in full-time graduate study.

Research Skills. Program skill requirements reflect the University’s expectations of one or more significant skills distinct from the dissertation but fundamental to doctoral and postdoctoral research. Specific skill requirements vary with programs. Traditionally, a reading knowledge of one or more foreign languages has been required; more recently a dem-
onstrated proficiency in computer science or quantitative methodology has been introduced.

Under University policy, each academic program leading to the Doctor of Philosophy establishes its own requirements for research skills. Responsi-

bility for the level of competency, the nature of validating the competencies, and the standards utilized in the evaluation rests with the department/school that offers the program. Descriptions of individual programs should be consulted for appropriate regulations and procedures. Information about schedules of examination, standards, and general procedures is available from all departments/schools and graduate program directors.

The research skills requirement must be met before taking the candidacy.
examination. For specific information, the student should consult the appropriate program, school or college.

**Candidacy Examination.** The written and oral examinations qualifying a student for candidacy for the degree of Doctor of Philosophy are comprehensive in nature. The graduate program director is responsible for coordinating the administration of the written and oral candidacy examinations and will appoint a committee to administer the exams. The examination committee will be made up of at least three faculty members, all of whom must be graduate certified. Before taking the qualifying examinations, the student must meet the appropriate departmental, school and college requirements and have the recommendation of the advisor or advisory committee. The examinations are taken near the end of the student’s coursework. The candidacy examinations are usually taken during the semester in which the last formal graduate courses listed in the student plan are taken.

When the student and the advisor or advisory committee have determined that the examinations should be taken, the student should obtain a Request for Permission to Take the Ph.D. Candidacy Examination (Graduate Form 15) no later than one month before the date of the first examination. The student should secure the signature of the advisor or advisory committee and submit the form to the graduate program director, who will verify that the student meets the prerequisites for the candidacy examinations. The graduate program director should be consulted on the schedule of the examinations. Once permission has been granted, postponement of the examinations must have the approval of the graduate program director.

After successful completion of the written examination, an oral examination, which must be taken prior to the end of the next semester, is given addressing topics discussed in the written examination and possible additional materials. The oral examination is a serious and integral part of the qualifying procedure. A student must pass both the written and oral candidacy examinations. The written examination must be passed before the oral examination may be taken. For either the written or oral examination, more than one negative vote from the examining committee will result in a failure. A failed written examination must be retaken successfully within one year. A student who passes the written examination on the first attempt need not repeat the written exam in the event of failing the oral exam. A failed oral exam, which also may be attempted a second time, must be retaken prior to the end of the next semester.

Neither the written nor the oral examination can be passed conditionally. A pass cannot be made contingent upon doing extra courses, additional projects, etc.

The examination committee will report, in writing, to the graduate program director and the dean the results of the examinations.

**Students must be registered in any semester in which they are scheduled to appear for the examination.**

**Dissertation Committee.** After the candidacy examinations have been passed, the dissertation committee is formed to supervise the dissertation research. Faculty who agree to serve on a dissertation committee understand that they are committed to serve until the dissertation is completed. The committee must have approval of the graduate program director and the college dean using Graduate Form 16 (Ph.D. Dissertation Committee). Replacement of the dissertation committee chair or any other substantial change in the composition of the dissertation committee initiated by the student requires that the reconstituted dissertation committee re-evaluate and re-approve the dissertation prospectus. The committee should have at least three Old Dominion University faculty members; one faculty member must be from outside the major department/school. The chair must be certified for graduate instruction and be an authority in the field of specialization of the proposed dissertation. Committee membership may be extended to a non-University person with special knowledge of the dissertation subject area. Voting privileges can be provided such specialists upon the recommendation of the chair and approval of the graduate program director and the college dean. No more than one-third of the committee’s membership can be individuals external to the University. Adjunct faculty members who are certified for graduate instruction may be appointed as voting members of the committee upon the recommendation of the director of the dissertation committee and approval of the graduate program director and the college dean. The dissertation and the final oral defense of the dissertation must have the majority approval of the dissertation committee.

**Change in Dissertation Committee.** Changes must be made in advance of the oral dissertation defense. Changes made in the dissertation committee are made only with the approval of the graduate program director and the college dean.

**Admission to Candidacy.** Admission to candidacy is a formal step that occurs after the student has (1) passed the Ph.D. written and oral candidacy examinations, (2) filed an approved dissertation proposal, and (3) completed formal course work.

**Dissertation Preparation.** General regulations and procedures governing the submission of a doctoral dissertation are given in the Guide for Preparation of Theses and Dissertations. Full information, including detailed procedures and qualifications for undertaking a doctoral dissertation, is available in the student’s major/school and should be obtained by the student and the dissertation advisor at the beginning of the planning for research and writing of a dissertation.

After approval of the dissertation proposal, the chair of the dissertation committee shall recommend the student’s admission to candidacy to the graduate program director and the dean.

**Oral Dissertation Defense.** The format of a defense is determined by the dissertation committee with the approval of the graduate program director. The defense is chaired by the chair of the dissertation committee. The chair will act as moderator, ruling on questions of procedure and protocol that may arise during the defense. The chair of the defense represents the college dean, to whom he or she makes a complete and prompt report on the defense. The chair should also promptly notify the graduate program director of the results of the defense.

The oral dissertation defense is scheduled for the time and place approved in the request for the dissertation defense. A two-week lead time is required for scheduling. This information is published in the appropriate University news media. The oral dissertation defense is open to the University community; all interested members are encouraged to attend the examination.

The aim of the defense is to explore with the candidate the methodological and substantive contributions of the already approved dissertation. Majority approval by the examiners constitutes successful completion of the defense of the dissertation. In case of failure, the dissertation committee may recommend that the candidate be dropped or be allowed re-examination no earlier than three months after the first examination.

Satisfactory performance on this examination and adherence to the regulations outlined above complete the requirements for the degree. Graduate Form 6 (Thesis/Dissertation Acceptance and Processing) and Graduate Form 11 must be submitted to the Office of the Registrar with the completed dissertation upon completion of requirements for the degree.

**Dissertation Load Registration.** All doctoral students who have advanced to candidacy are required to be continually registered for an appropriate number of dissertation units during each semester and summer session. (See “Graduate Student Registration Requirement.”)

A candidate who finds it necessary to be excused from registration for a semester must report formally, before the beginning of the semester, to the dissertation committee and the graduate program director and request by petition a leave of absence using Graduate Form 27 (Permission to Take a Leave of Absence from Graduate Studies). A leave of absence may not exceed one year and may not be repeated. During a leave of absence, the candidate will not be entitled to assistance from the dissertation committee or to the use of University facilities. The granting of leave of absence does not change the candidate’s responsibility for meeting the time schedule for the completion of degree requirements.

**Departmental/Program Requirements**

The requirements and regulations set forth above are to be construed as the minimal requirements established by the University. Students also are obligated to meet all additional requirements established by the appropriate graduate program.
Colleges, Schools, and Departments of Instruction

College of Arts and Letters

Chandra de Silva, Dean
Janet E. Katz, Associate Dean
Annette Finley-Crosswhite, Associate Dean for Research and Graduate Studies

The special commitment of the College of Arts and Letters is to the ideals of the liberal arts. Its curriculum is designed to introduce students to the full range of human experiences through the study of cultural heritage, forms of artistic and literary expression, patterns of social and political behavior, and methods of critical inquiry.

The College of Arts and Letters comprises the Departments of Art, Communication and Theatre Arts, English, Foreign Languages and Literatures, History, Music, Philosophy and Religious Studies, Political Science and Geography, Sociology and Criminal Justice, Interdisciplinary Studies, and Women’s Studies; the Institute of Humanities; the Institute for the Study of Race and Ethnicity; the Institute of Asian Studies; the Institute for Applied Ethics; Community Dance Programs; the Old Dominion University Community Music Academy; the Social Science Research Center; the Center for Regional and Global Study; and the Filipino American Center.

The College offers undergraduate degrees in Art History, Communication, Criminal Justice, English, Foreign Languages, Geography, History, Interdisciplinary Studies, International Studies, Music, Philosophy, Political Science, Sociology, Studio Art, Theatre and Dance, and Women’s Studies.

In addition to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degrees offered by the above departments, the College of Arts and Letters offers a variety of accelerated and graduate degree programs. Accelerated programs allow students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree making it possible to earn both a B.A. or B.S. and an M.A. in five years. Accelerated programs are available in applied linguistics, English, history, international studies, and humanities; concentrations in humanities are available in communication, individualized interdisciplinary studies, or women’s studies.

The English and History Master of Arts programs were among the first graduate programs at Old Dominion University. Both programs have successfully maintained a high level of excellence and have graduated a steady flow of successful masters in their fields. The Master of Arts in Humanities provides interdisciplinary graduate work for people in pursuit of broader academic and professional fulfillment.

The Master of Fine Arts in creative writing is widely regarded as a terminal degree and prepares students for careers as publishing writers. The Master of Arts in Applied Linguistics is for those who wish to teach English as a second language or to pursue further graduate work in linguistics. The M.A./M.F.A. degree in visual studies is a joint venture with Norfolk State University that offers artists the opportunity to earn a terminal degree in their field. The M.A. in Applied Sociology, also offered jointly with Norfolk State University, aims to develop high-level social-research competence for persons working in the public and private sectors. The Graduate Programs in International Studies offers both an M.A. and a Ph.D. and provides advanced research and graduate training in global problems and transnational issues.

Both undergraduate and graduate programs in the College of Arts and Letters are structured to make possible close personal contact between students and faculty and thus to meet the needs of individual students. Arts and Letters faculty members are dedicated to good teaching, proud of their achievements in research, and committed to enhancing in every way possible the exciting and stimulating environment that is Old Dominion University.

Undergraduate Degree Requirements

Arts and Letters requirements for all undergraduate degrees include all of the General Education Requirements. In addition, all Arts and Letters majors must take ENGL 111C (or HIST 111C or PHIL 111C if specified by the specific department) and must obtain a minimum grade of C in both English 111C and ENGL 111C (or HIST 111C or PHIL 111C) before declaring a major and in order to graduate.

Students earning a Bachelor of Arts degree must also complete the following foreign language requirement: Proficiency established at the fourth-semester level through one of the following:

a. Successful completion of the 202 or 212 course at Old Dominion University (or equivalent at another institution).

b. Exemption through fourth semester granted for acceptable scores on achievement tests.

c. Advanced placement with up to nine hours credit at the 300 level for acceptable scores on the advanced placement test taken at the conclusion of advanced placement courses in high school.

d. Foreign nationals who are non-native speakers of English are exempt from the foreign language skills requirements for General Education and for the College of Arts and Letters. The Foreign Languages and Literatures Department is charged with certifying that a student is a non-native speaker.

Students who have taken three or more years of a foreign language in high school but have not been granted advanced placement as explained in item c above must take the College Entrance Examination Board (CBEE) achievement test before continuing in the same language at Old Dominion University. An achievement test score of under 500 normally requires that such students begin with the 121F course in Spanish or the 102F course in other foreign languages.

Additional major requirements are listed under the various departments. The requirements for the Bachelor of Fine Arts and Bachelor of Music degrees are listed under art and music respectively. The requirements for the Bachelor of Science degree with a major in communication, criminal justice, geography, political science, sociology, interdisciplinary studies and women’s studies will be found under political science and geography, sociology and criminal justice, communication and theatre arts, interdisciplinary studies, and women’s studies.

Students wishing to take a major or minor in the College of Arts and Letters must register with the appropriate department. The College of Arts and Letters allows a maximum of six hours of activity credit. Activity credit beyond the established maximum may be given in unusual circumstances only and will require the approval of the dean of the College of Arts and Letters. Activity credit required by a student’s major department will not be counted against the credit limitation.

General Education – New Portal to Appreciating our Global Environment

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer than 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

The College of Arts and Letters has approved the following substitutions in interdisciplinary studies-teacher preparation major must substitute GEN 101 for the philosophy perspective. Students pursuing majors leading to a Bachelor of Music degree must substitute GEN 101 for the second laboratory science course. Students pursuing majors leading to the Bachelor of Arts and Bachelor of Fine Arts degrees in art must substitute GEN 101 for the third natural science or technology course. All other majors in the College of Arts and Letters may substitute GEN 101 for either one history, one social science or one natural science/technology perspective course. Students should consult their advisors for additional information.

College of Arts and Letters Thesis and Dissertation Commencement Ceremony Policy

Master’s degree students for whom writing a thesis is part of their degree requirements must adhere to the following deadlines in order to participate in the May or December commencement ceremonies. The completed thesis should be defended eight weeks before the last day of class in the semester in which the student expects to graduate. The thesis must be submitted to the dean’s office for review no later than four weeks before the last day of class, and the final signed thesis and all required
copies and forms must be submitted to the Registrar's Office no later than the last day of class in the semester in which the student expects to graduate. An exception to this rule is made for Master's degree students who expect to graduate in August. If the student completes the thesis and passes the thesis defense before the day of the May commencement ceremony, he or she may participate in the May ceremony.

Ph.D. students must adhere to the following deadlines in order to participate in commencement ceremonies. The completed dissertation should be defended 10 weeks before the last day of class in the semester in which the student expects to graduate. The dissertation must be submitted to the dean's office for review no later than six weeks before the last day of class, and the final signed dissertation and all required copies and forms must be submitted to the Registrar's Office by the last day of class. Ph.D. students may not participate in commencement ceremonies until all of the degree requirements are completed and the dissertation is delivered to the Registrar's Office.

Center for Family Violence Education and Research

The Old Dominion University Center for Family Violence Education and Research (CFAVER) is an interdisciplinary group of professionals with a common interest in understanding family violence and in developing public awareness campaigns to educate members of the public about family violence, working with child abuse, sibling abuse, partner abuse, and elder abuse. The Center's mission is to educate and promote an understanding of the various forms of family violence, including physical, emotional, and sexual abuse. The Center also works to increase awareness about these problems and to conduct interdisciplinary research focusing on different types of family violence, developing public awareness campaigns to educate members of the public about family violence, and to evaluate programs and processes used with family violence victims and offenders, and building relationships with various agencies responsible for family violence case care.

Institute for Applied Ethics

The Institute for Applied Ethics exists to further critical reflection on the relatively specific and concrete ethical questions that arise in the course of our lives. The institute sponsors research presentations by Old Dominion University faculty members and external scholars who work in the field of applied ethics, forums for the discussion of the ethical dimension of current events, and conferences centered on particular areas of applied ethics (e.g., biomedical ethics, business ethics, computer ethics, political ethics, etc.).

Institute for the Study of Race and Ethnicity

In support of the mission of Old Dominion University to place special emphasis upon understanding the perspectives of women, minorities, and non-Western cultures, the Institute for the Study of Race and Ethnicity (ISRE) seeks to develop, promote and implement academic, research and public service programs that focus on the study of race and ethnicity in the region, the nation, and globally. The political, social, economic, and cultural experiences of African Americans, Filipinos, and other communities of color are emphasized in the work of the institute. The ISRE seeks to establish itself as a major archive and research center in Virginia and the southeastern region of the United States by providing archival resources through its Resource Center (317 Batten Arts and Letters Building) and engaging in the collection, analysis, and dissemination of data and research.

Minor in African-American Studies

The minor in African American studies is administered by the Institute for the Study of Race and Ethnicity. Students who wish to qualify for the program must submit a minor declaration form to the African American studies program office in BAL 317.

A variety of African American studies courses are offered through a number of departments and programs in the University. Interdisciplinary in nature, the African American Studies minor provides an opportunity for students to investigate the history and culture of people of African descent and their current political, social, and economic interaction in society. The minor in African American studies is a 15 credit-hour program which includes the following:

1. **AAS 100 Introduction to African American Studies (Required)**
2. A minimum of six hours of 300/400 level humanities courses from among the following:
   - DANC 391 African American Perspectives in Dance
   - ENGL 465 African American Literature
   - HIST 361 African American History to 1865
   - HIST 362 African American History since 1865
   - HIST 455 African American Historiography
   - MUSC 460 History and Aesthetics of Jazz
3. A minimum of six hours of 300/400 level social science courses from among the following:
   - CRJS 450 Blacks, Crime, and Justice
   - POLS 309 Race, Culture, and Public Policy
   - POLS 316 Politics of Africa
   - POLS 410 African American Politics
   - POLS 412 Politics of the Civil Rights Movement
   - PSYC 460 Psychology of African Americans
   - SOC 323 Sociology of Minority Families
   - COMM 434 African American Rhetoric
4. With the approval of the director, other courses that focus on the African American experience can also fulfill the requirements of the minor.
5. No course taken to satisfy the requirement of the minor can be used with family violence victims and offenders, and building relationships with various agencies responsible for family violence case care.

Minor in American Studies

American studies offers a unique opportunity to explore the culture and society of the United States from a perspective that is inherently interdisciplinary. A minor in American studies provides a structured program to encourage students to cross traditional academic boundaries and to integrate the arts, humanities, and social sciences. The minor in American studies is an effective program complement for those majoring in the related fields of art, music, dance and theatre; communication, English, and foreign languages; history, geography, and political science; philosophy, anthropology, sociology, and criminal justice; as well as interdisciplinary majors in women's studies, ethnic studies, and international studies. The minor is also effective for international students, who may wish either to better understand American culture or to acquire an expertise useful in their home countries.

All students minoring in American studies must take AMST 300 (3 hours) and 12 hours of designated courses divided into two fields (the arts and the humanities, and the social sciences), for a total of 15 hours. Designated course listings for the minor in American studies are as follows:

1. AMST 300, Perspectives in American studies
2. At least one course (but no more than two from any single department) in the Arts and the humanities, chosen from the following:
   - ARTH 325, American Art before 1865
   - ARTH 326, American Art after 1865
   - ENGL 340, American Drama
   - ENGL 342, Southern Literature
   - ENGL 343, American Literature since 1860
   - ENGL 344, American Literature since 1860
   - ENGL 455, African American Literature
   - ENGL 472, America in Vietnam
   - FLET 473, Contemporary Latin American Literature
   - MUSC 460, History of Jazz
3. At least one course (but no more than two from any single department) in the social sciences, chosen from the following:
   - COMM 344, African American Rhetoric
   - COMM 479, American Film History
   - GEOG 350, Geography of the U.S. and Canada
   - HIST 357, America in the 1960s
   - HIST 363, Women in U.S. History
   - HIST 365, Native American History
   - HIST 445, History of Early American Thought
   - HIST 446, History of Modern American Thought
   - POLS 312, American Political Thought
   - POLS 415, Women and Politics in America
   - SOC 320, Social Inequality
   - SOC 340, Sociology of Women
   - WMST 302W, All American Women
Minors in European Studies, Japanese Studies and Latin American Studies

European Studies. The minor in European Studies will focus on different aspects of European culture, language, politics, geography, philosophy, and history. Students may declare a minor in European Studies upon successful completion of French, German, or Spanish 311 or 312W or the equivalent. An additional 12 credits must be taken from the following program areas: Art, English, Foreign Languages & Literatures, History, Music, Philosophy, and Political Science and Geography (see two options).

Option 1:

a. Two courses from the Department of Foreign Languages and Literatures above 312W. One course must be outside the language of proficiency, or can be a FLET course with a European emphasis.
b. Two courses from related disciplines outside of the Department of Foreign Languages and Literatures.

Option 2:

a. Three courses from the Department of Foreign Languages and Literatures above 312W. One course must be outside the language of proficiency, or can be a FLET course with a European emphasis.
b. One course from related disciplines outside of the Department of Foreign Languages and Literatures.

Credits can also be earned by studying abroad in Europe. The student's course of study will be determined in consultation with an advisor from the Department of Foreign Languages and Literatures.

For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Japanese Studies. The minor in Japanese Studies will focus on the study of several aspects of Japanese culture, language, politics, geography and history. Students may declare a minor in Japanese Studies upon successful completion of JAPN 311 and JAPN 312 or the equivalent. An additional six credit hours must be taken from two different programs in the following areas: Japanese, Political Science, History, and Philosophy.

Credits can also be earned by studying abroad in Japan. The student's course of study will be determined in consultation with an advisor from the Department of Foreign Languages and Literatures.

For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Latin American Studies. The minor in Latin American Studies will focus on the study of several aspects of Latin American culture, language, politics, geography and history. Students may declare a minor in Latin American Studies upon successful completion of SPAN 311 or 312W or the equivalent. (Proficiency in Portuguese will also be accepted.) An additional 12 credit hours at the 300 or 400 level must be taken from at least three of the following program areas: International Political Science, Spanish, History, and Geography.

Credits can also be earned by studying abroad in Latin America. The student's course of study will be determined in consultation with an advisor from the Foreign Languages and Literatures Department.

For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Film and Video Studies

A minor in film and video studies consists of 15 hours of course work taken from a minimum of three academic fields. Courses taken for the minor cannot be used to fulfill other degree requirements. The requirements are as follows:

a. COMM 470W (Film as Communication) or ENGL 312 (The Film) - 3 hours
b. One internationally-oriented course from the following: FLET 300 (Understanding European Film), COMM 471W (International Film History), ENGL 425 (Film Directors in Context), WMST 495 (Women in World Cinema), FR 405 (History of French Cinema), SPAN 469 (Hispanic Film), GER 445 (New German Film), or approved topics courses - three hours

c. Nine hours chosen from the courses listed above or from THEA/COMM 370 (The Video Project), THEA/COMM 380 (Video Documentary I), COMM/TEA 479 (American Film History), ENGL 424 (Screen Works in Native Media), THEA/COMM 480 (Video Documentary II), COMM/TEA 485 (The Moving Image), or approved topics courses.

For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

For more information, contact the Department of Communication and Theatre Arts at 683-3828.

Jewish Studies Minor

The minor in Jewish Studies requires that students take JST/REL 350, Judaism, as well as a three-hour independent study (JST 497) supervised by the coordinator of Jewish Studies, plus an additional six hours of approved course work for the 300-level or above, for a total of 12 hours. Students interested in the Jewish Studies minor are encouraged to take HEBR 111F to fulfill the University foreign language requirement.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Inquiries regarding the Jewish Studies minor should be directed to Dr. David Metzger, coordinator of Jewish Studies: dmetzger@odu.edu, 757 683-3875, BAL 905.
The Institute for Jewish Studies and Interfaith Understanding

Rabbi Lawrence Forman, D.Min., D.D., Institute Director (liforman@odu.edu)

In 2002, with a $300,000 matching grant from the Dudley Cooper Trust, Old Dominion University announced the establishment of an Institute for Jewish Studies and Interfaith Understanding dedicated to the idea that interfaith understanding involves both an appreciation of Judaism’s historic role in the development of western civilization and an understanding of the cross-cultural development of the world’s religions. To this end, the institute coordinates lectures, symposia and reader groups related to Jewish history and thought as well as Judaism’s continuing dialogue with Christian, Islamic, and Asian faith traditions. Presenting information about the world’s religious and ethnic diversity in a University setting of open dialogue to thoughtful students, young and old, can enrich overall understanding of the issues and challenges that confront us as we enter a new century.

B.A. or B.S./M.B.A. Five-Year Program

This program allows students to complete B.A. or B.S. and M.B.A. degrees in five years. Students who have been formally accepted into the program complete a business core during their senior year. The business core fulfills the upper-division General Education requirements as a minor. All students interested in pursuing the five-year program should plan their undergraduate course of study with the requirements of the program, as explained below, clearly in mind.

Entrance Requirements

A potential candidate should have:
1. Achieved a minimum Graduate Management Admission Test (GMAT) score of 550.
2. Completed all lower-level General Education requirements.
3. Completed at least 24 credit hours at Old Dominion University with a grade point average of at least 3.00.
4. Achieved a minimum index of 1200. The index is computed as 200 times the Old Dominion University grade point average plus the GMAT score.
5. Achieved senior standing at Old Dominion University.
6. Completed a calculus course, equivalent to MATH 200 (calculus for business and economics).

Admissions Procedure

Students interested in the program should plan to take the GMAT at least two semesters prior to the semester in which they plan to enroll. Students planning to enroll in the fall of their senior year should take the GMAT during the fall of their junior year. Applications should be submitted to the M.B.A. Program Office at the beginning of one full semester (fall, spring) prior to planned enrollment.

Students interested in the program should discuss their plans with the M.B.A. program director as early as possible. The M.B.A. program director will act as their advisor. The M.B.A. Program Office is located in 111 Constant Hall. The phone number is 683-3585.

Business Core - M.B.A. Courses

Students accepted into the five-year program must complete the following courses from the M.B.A. core during their senior year: ACCT 601, ECON 604, MGMT 602, MKTG 603, FIN 605, and DSCI 600. These credit hours will count toward the undergraduate degree and will meet upper-level General Education requirements. Students must maintain a 3.00 grade point average in these courses.

Requirements for the M.B.A.

After students have satisfactorily completed their undergraduate requirements, they must complete 30 hours in the M.B.A. program to include the requirements beyond the core, electives and the capstone course. More specific information about M.B.A. requirements is available from the M.B.A. program director.

Career Advantage Program and Guaranteed Practicum

The Career Advantage Program (CAP) was introduced in 1995 and is administered by the Career Management Center (CMC) in partnership with the academic colleges.

CAP is a series of career-related events and services designed to include a practical work experience (Guaranteed Practicum), which in the College of Arts and Letters and May take the form of an internship, cooperative education experience or a class containing a real-world, hands-on project. Classes meeting the specifications for the guaranteed practicum are noted in the Courses of Instruction section of this catalog as “(Qualifies as a CAP Experience).”

For more information students should contact their CMC Liaison or Co-op and Internship Coordinator in the satellite office in the Batten Arts and Letters Building or in the Career Management Center.

Career Management Center

The Old Dominion University College of Arts and Letters has residing within the Batten Arts and Letters building a Career Management Center satellite office. This office is staffed during posted hours during the summer and academic year. The staff links Arts and Letters students with the University-wide Career Advantage Program (CAP) through individual consultations, classroom presentations, operation of the Cooperative Education and Internship programs, and instruction on how to use the electronic job search and referral systems of the Career Management Center. The CMC staff serves as a primary outreach to employers and provides coordination of employer recruitment activities for the college. The staff also provides coordination and assistance in conducting college-specific events such as the Communications Alumni Panel, the Geography and Political Science Department Career Day, the Sociology and Criminal Justice Career Fair, and employer panels focused on issues relevant to students in the College of Arts and Letters.

ART

Robert Wojtowicz, Chair
Ken Daley, Chief Departmental Advisor
Office Telephone: (757) 683-4047

Bachelor of Arts—Art History Major

Elizabeth Lipsmeyer, Program Director

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 111C</td>
<td>3</td>
</tr>
<tr>
<td>HIST 111C</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 111C</td>
<td>3</td>
</tr>
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</table>

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Students interested in the program should discuss their plans with the M.B.A. program director as early as possible. The M.B.A. program director will act as their advisor. The M.B.A. Program Office is located in 111 Constant Hall. The phone number is 683-3585.

Business Core - M.B.A. Courses

Students accepted into the five-year program must complete the following courses from the M.B.A. core during their senior year: ACCT 601, ECON 604, MGMT 602, MKTG 603, FIN 605, and DSCI 600. These credit hours will count toward the undergraduate degree and will meet upper-level General Education requirements. Students must maintain a 3.00 grade point average in these courses.

Requirements for the M.B.A.

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ART

Robert Wojtowicz, Chair
Ken Daley, Chief Departmental Advisor
Office Telephone: (757) 683-4047

Bachelor of Arts—Art History Major

Elizabeth Lipsmeyer, Program Director

LOWER DIVISION GENERAL EDUCATION

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<tr>
<td>HIST 111C</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 111C</td>
<td>3</td>
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</tbody>
</table>

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Students interested in the program should discuss their plans with the M.B.A. program director as early as possible. The M.B.A. program director will act as their advisor. The M.B.A. Program Office is located in 111 Constant Hall. The phone number is 683-3585.

Business Core - M.B.A. Courses

Students accepted into the five-year program must complete the following courses from the M.B.A. core during their senior year: ACCT 601, ECON 604, MGMT 602, MKTG 603, FIN 605, and DSCI 600. These credit hours will count toward the undergraduate degree and will meet upper-level General Education requirements. Students must maintain a 3.00 grade point average in these courses.

Requirements for the M.B.A.

After students have satisfactorily completed their undergraduate requirements, they must complete 30 hours in the M.B.A. program to include the requirements beyond the core, electives and the capstone course. More specific information about M.B.A. requirements is available from the M.B.A. program director.
**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major. Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Minor in Art History**

A student who wishes to complete a minor in art history must receive the approval of the chief departmental advisor and the program director. A total of 18 hours in art history is required. This will include ARTH 211 and 212 and 12 hours selected from ARTH 300- and 400-level courses. A reading knowledge of French, German, Italian or Spanish is strongly advised.

For completion of the minor a student must have a minimum overall cumulative grade point average of 2.00 and no grade lower than a C in all courses taken toward the minor. Transfer students must complete a minimum of six hours in ARTH 300- and 400-level courses through courses offered by Old Dominion University.

**Bachelor of Arts–Art Education Major**

Richard Nickel, Program Director

**Admission.** Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C in the content area and C- in the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

**Continuance.** Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major with no grade less than a C and the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II Art Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

**Graduation.** Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C in the major and C- in the professional education core; and completion of a minimum of 123 credit hours.

The curriculum is as follows:

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (satisfied in the major by ARTS 406 and 407 but students are encouraged to take COMM 101R)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Proficiency through 202 level)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills (Satisfied in the major by ARTS 279)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (select from DANC 185A, MUSC 264A, THEA 241A only—ARTH 121A and ARTH 122A may not be used to satisfy this requirement)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

**Art Requirements (45 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 211 Ancient/Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 212 Renaissance/Modern Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 325, 326, 351W, or 435</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 350W Art Criticism</td>
<td>3</td>
</tr>
<tr>
<td>Two courses from ARTS 202, 203, and 204</td>
<td>6</td>
</tr>
<tr>
<td>ARTS 211 Introduction to Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 231 Fundamentals of Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 241 Fundamentals of Painting</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 251, 252, or 253 Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 261 Intro to Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 263 Introduction to Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 279 Fundamentals of Digital Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 281 Crafts 1: Fibers or ARTS 291 Crafts 1: Metalsmithing/Jewelry</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 331 Drawing: Composition</td>
<td>3</td>
</tr>
</tbody>
</table>

**License in Art Education**

A total of 78 hours in art and professional courses is required in addition to the General Education Requirements. A minimum of 123 credits is required for the degree.

**Professional Education (33 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 305 Elementary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 406 Secondary Art Education</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 407 Middle and Secondary School Practicum</td>
<td>3</td>
</tr>
<tr>
<td>ECI 301 Social Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>ECI 408 Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>ECI 485 Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>ESSE 406 Special Needs Children-General Ed</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 413 Fundamentals-Human Growth and Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

Satisfied through the professional education sequence.

**Art Education Licensure Only**

Candidates who have already earned an undergraduate degree in studio art or art history may seek licensure only. Information on applying for licensure can be obtained from the Darden College of Education or the art education program director. A minimum of 36 hours of art and professional courses (including student teaching) from Old Dominion University is required. Before registering for classes candidates must present a portfolio for review by the art education director. The director will determine which transferable courses will meet the cognate program requirements and which art and professional courses must be completed for licensure. A minimum cumulative grade point average of 2.75 is required for continuance and licensure.

**Bachelor of Arts–Studio Art Major**

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (may be satisfied in the major by ARTH 351W)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Proficiency through 202 level)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills (ARTS 279 may be used)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (select from DANC 185A, MUSC 264A, THEA 241A only—ARTH 121A and ARTS 122A may not be used to satisfy this requirement)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sciences</td>
<td>6</td>
</tr>
</tbody>
</table>
Major Courses (42 hours)
ARTS 202 Two Dimensional Design 3
ARTS 203 Three Dimensional Design 3
ARTS 231 Fundamentals of Drawing 3
ARTS 241 Fundamentals of Painting 3
ARTS 251, 252, or 253 Printmaking 3
ARTS 261 Intro to Sculpture or ARTS 263 Intro to Ceramics 3
ARTS 279 Fundamentals of Digital Art 3
ARTS 331 Drawing: Composition 3
ARTS 304 Color 3
Two ARTS Studio Arts Electives 6
ARTH 211 Ancient/Medieval Art 3
ARTH 212 Renaissance/Modern Art 3
ARTH 350W Art Criticism or 351W Research Methods in Art History 3

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minor in Studio Arts

A student who wishes to complete a minor in studio arts must receive the approval of the chief departmental advisor. A total of 12 hours in studio art 300- and 400-level courses is required. These courses have prerequisites which must be met by lower-level studio art courses chosen as electives. The total number of electives should not exceed nine hours. Students who wish to study studio minor should consult with the chief departmental advisor before their sophomore year to determine the specific courses and prerequisites which must be met to complete the minor. Course selection will be done in the minor. Transfer students must complete a minimum of six hours in ARTS 300- and 400-level courses through courses offered by Old Dominion University.

Bachelor of Fine Arts

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (may be satisfied by ARTH 351W, ARTS 400 or 401, or ARTS 406 or 407)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (fulfilled with ARTS 279)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (select from DANCA 185, MUSC 264A, THEA 241A only—ARTH 121A and ARTS 122A may not be used to satisfy this requirement)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required. Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Foundation and Studio courses (required of all BFA students)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 211 Ancient/Medieval Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 212 Renaissance/Modern Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 350W Art Criticism or 351W Research Methods in Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 300/400 Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

ARTS 202 Two Dimensional Design 3
ARTS 203 Three Dimensional Design 3
ARTS 211 Intro to Photography 3
ARTS 231 Fundamentals of Drawing 3
ARTS 241 Fundamentals of Painting 3
ARTS 251, 252, or 253 Printmaking 3
ARTS 261 Intro to Sculpture or ARTS 263 Intro to Ceramics 3
ARTS 279 Fundamentals of Digital Art 3
ARTS 281 Crafts 1: Fibers or 291 Crafts 1: Metallsmithing/Jewelry 3
ARTS 304 Color 3
ARTS 331 Drawing: Composition 3
ARTS 400 OR 401 Senior Show/Design Portfolio (satisfies oral communication requirement) 3
ARTS STUDIO ELECTIVES (ARTS) 9
(Graphic Design concentration requires 6 hours)

Studio Art Concentrations
All BFA students must choose one of the following after completion of the foundation courses: 18-21 credits.

Crafts-Fibers
ARTS 381, 481 6
Six credits from: ARTS 254, 341, 350 or 450, 481 6
Six credits from: ARTS 350 or 450, 363, 364, 497 6
((ARTS 281 and either ARTS 251 or 252 must be taken from the Core.)

Drawing and Design
ARTH 271, 350, 431, 432 12
Six credits from: ARTS 302, 341, 370, 371, 373, 376, 395/495, 433, 473, 474, or 497 6

Graphic Design
ARTH 271, 370*, 371, 372, 471 15
Six credits from: ARTS 366, 373, 471, 473, 474, 475, or 477 6
(*After completion of ARTS 370, application through portfolio review must be made to the department to continue in the graphic design concentration. In addition, continuity requires a grade of C or higher in all prerequisite courses in the graphic design sequence.)

Metalsmithing and Sculpture
ARTS 261 or 263, 361, or 391 6
ARTS 363, 461, or 491 6
ARTS 253, 263, 363, 391, 463, 491, 495, or 497 6

Painting
ARTH 341, 431, 432 or 433, 441, 442, 469 18

Print and Photo Media
ARTH 311, 350, 411 9
Three credits from: ARTS 251, 252, 253 or 254 3
Six credits from: ARTH 327, ARTS 251, 252, 253, 373, 395/495, 450, 473 6

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

BFA with Teaching Licensure

Admission. Students wanting to enroll in the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than C in the content area and C- in the professional education core. Additionally, passage of the PRAXIS I exam or State Board of Education-approved SAT scores prior to enrollment in any education practicum course or courses in developing instructional strategies is required. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major with no grade less than C and the professional education core with no grade less than C- for continuance in the College of Education. Passage of the PRAXIS II exam is required for teacher education licensure. The PRAXIS II Art Content Examination must be passed before
the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

**Graduation.** Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C in the major and C- in the professional education core; and completion of a minimum of 141 credit hours.

In addition to the requirements for the B.F.A. degree, students must complete 33 hours of professional education requirements for K-12 licensure or 36 credit hours for the M.F.A. requirements: (1) requirements for General Education and electives and (2) 30-35 credit hours, including 18 hours in studio, six hours in related academics, six hours in graduate seminars, and three hours in documentation (exhibition). The Master of Fine Arts degree requires a minimum of 60 semester hours, including 27 hours in graduate studio, 12 hours in related academics, nine hours in graduate seminars, six hours in directed field experience appropriate to the student's professional goals, and six hours in documentation (including the solo exhibition).

Students must earn at least a B (3.00) in all courses used to fulfill the graduate studio requirement. In consultation with the advisory committee, students must also take six hours (M.A.) or nine hours (M.F.A.) of their graduate studio requirement on the alternate campus. In their first year of study, all students must take ARTS 600 Graduate Seminar: Art Criticism (NSU: FIA 510). The Graduate Seminar is offered in alternate semesters at each campus.

Upon completion of 12 hours of graduate work, each student will present a selection of work to the faculty for discussion and evaluation. In the second semester, the student selects a major advisor and two advisory committee members, one from each campus. At the end of the first year of study, a continuance and candidacy review will be conducted by the candidate's advisory committee and the graduate faculty. The committee will submit a written recommendation for continuance or termination to the student and program codirectors. The committee will include appropriate explanations of its decision. In the case of continuance, the committee will indicate candidacy for the M.A. or M.F.A. degree.

M.F.A. candidates must take ARTS 700 Directed Field Experience (NSU: FIA 700). Working closely with the advisory committee, the student will select one activity that could include a teaching internship on or off campus; independent study at another institution; an internship in a museum, community center or other art program; work in a recreational program, design agency or industry; or a special project off campus.

All M.F.A. candidates are required to enroll in ARTS 701 Documentation (NSU: FIA 701). Working closely with the advisory committee, the candidate is required to present a public exhibition of their work to meet this requirement. Each candidate's advisory committee will submit the documentation requirements in writing to the candidate and to the visual studies program co-directors. All M.A. and M.F.A. candidates must register for ARTS 702 Thesis Exhibition (NSU: FIA 702) during their final semester of study. Candidates are required to present a public exhibition of their work to meet this requirement. Each candidate's advisory committee will submit the documentation requirements in writing to the candidate and to the visual studies program co-directors.

The student's thesis committee, composed of the advisory committee and two additional graduate studio faculty members, one from each campus, will be responsible for evaluating all preparation and work done for ARTS 701-702 (NSU: FIA 701-702). The committee will submit its recommendations and grade assignments for each course to the student and the program codirectors.

**Graduation.** Application for graduation must be made on the NSU campus. Contact the Fine Arts Department at NSU concerning deadlines, procedures for applying, fees, etc. The diplomas carry the seals and appropriate signatures of both institutions. M.A./M.F.A. candidates may attend ceremonies on either or both campuses. Students planning to attend graduation ceremonies at Old Dominion University should notify the Office of the Dean, College of Arts and Letters.

**ASIAN STUDIES**

**Bachelor of Arts—Asian Studies**

Jie Chen, Director

A total of 120 credit hours is required for the Bachelor of Arts (BA) in Asian Studies. The 120 credit hours are divided into two major categories: (1) requirements for General Education and electives and (2) 30-35 hours at the upper level required for the Asian Studies major.

Each of these two categories consists of the courses as follows:
LOWER-DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>12</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History (HIST 101H required)</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Social Sciences (POLS 100S and ECON 2015 or ECON 2020S)</td>
<td>6</td>
</tr>
</tbody>
</table>

MAJOR REQUIREMENTS

Core courses (12 credit hours):
- Geography of Asia (GEOG 453)
- Asian Experience (study abroad or an approved practicum)
- Research Methods (HIST 201, POLS 308, SOC 337)
- PSYC 317, or ECON 400
- Capstone Seminar in Asia Studies (ASIA 461)

Language courses (6-8 credit hours):
- Japanese, Chinese or any Asian language from East, Southeast or South Asia, subject to approval by the program director (two courses at the upper level, in the Department of Foreign Languages, in addition to the 12 credits required for lower-level foreign language for a B.A. degree)

Upper-level Elective courses (15 credit hours at the 300 or 400 level):
- These courses can be elected from the following list below. At least one of the elective courses must be selected from the Humanities (i.e., history, literature, religion, philosophy, art, theatre, and music) and one from Social Sciences/Business (e.g., political science, economics, business management, marketing, geography, sociology, communication, and women’s studies). No more than two courses may be taken in any one discipline. Students are strongly encouraged to take courses in more than one region of Asia. At least one course must be writing intensive. Courses are under development in different disciplines, and additional courses with an Asian content may be approved by the program director.

Asian Studies
- ASIA 460 Major Issues in Asia
- ASIA 495 Topics in Asian Studies

Business Management and Marketing
- MKTG 496 Topics in Business Management and Marketing (Asian content)

Communication
- COMM 407 Communication and Culture in SE Asia

Economics
- ECON 495 Topics in Economics (Asian content)

Filipino American Studies
- FAST 395 Topics: The Filipino American Experience

Foreign Languages
- CHIN 395 Topics in Chinese
- CHIN 311 Advanced Chinese Language and Culture I
- CHIN 312 Advanced Chinese Language and Culture II
- JAPN 311 Advanced Japanese
- JAPN 312 Advanced Japanese Language and Culture
- FLET 310W Faces of Japan (Culture Class in English)

Geography
- GEG 456 Geography of South East Asia
- GEG 495/496 Topics in Geography (Asian content)

History
- HIST 331 Colonialism and Nationalism in SE Asia
- HIST 332 South Asia since Independence
- HIST 336 Emergence of the New China
- HIST 338 Japan’s Era of Transformation since 1800
- HIST 395 Topics in History (Asian content)
- HIST 439 Politics & Society in East Asia since 1945

International Business
- INBU 433 Doing Business in Asia

Philosophy and Religious Studies
- PHIL 353 Asian Religions
- PHIL 354 Comparative Philosophy: East and West
- PHIL 480 Hinduism
- PHIL 481 Buddhism
- PHIL 482 Chinese religion and philosophy
- PHIL 485 Japanese religion and philosophy
- PHIL 495/496 Topics in philosophy (Asian content)
- REL 352 Islam

Psychology
- PSYC 495 Topics in Psychology (Asian content)

Sociology
- SOC 395 Topics in Sociology (Asian content)

Women’s Studies
- WMST 495 Topics in Women’s Studies (Asian content)

UPPER-DIVISION GENERAL EDUCATION

Option A: Approved minor, 12-24 hours; also second degree or second major

Option B: Cluster, 9 hours (3 hours may be in the major area of study)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minor in Asian Studies

Students who wish to qualify for the minor in Asian studies must file a minor program declaration with the director of the Institute of Asian Studies and complete a total of 15 credit hours, of which at least 12 credits must be taken at the 300-400 level, including ASIA 460. No more than two courses may be taken from any one discipline. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

In addition to the Asian studies core and Asian studies topics courses, courses with significant Asian content are offered regularly in the following disciplines: business management/marketing, communication, foreign languages, geography, history, philosophy, political science, psychology, sociology, and women's studies. Still others are offered from time to time in anthropology, art, economics, English, and other disciplines. Students are encouraged to include study abroad in Asia as part of their program.

Course listings for the Asian studies minor are as follows:

1. Asian Studies: ASIA 460 (Core Course), 495
2. Anthropology: ANTR 300
3. Business Management and Marketing: MKTG 463, 496
4. Communications: COMM 300, 400W, 407, 495/496
5. Economics: ECON 400, 454, 495
6. English: ENGL 395, 396
7. Foreign Languages: CHIN 111F, 112, 212, 395, JAPN 111F, 212, 250, 311, 312, 495, FLET 310W
8. Geography: GEOG 453, 456, 495/496
10. International Business: INBU 333, 433
11. Philosophy and Religious Studies: PHIL 353, 354, 480, 481, 482, 485, 495/496
12. Political Science: POLS 338W, 435, 437, 495/496
13. Psychology: PSYC 420, 495
15. Women’s Studies: WMST 401W, 495, 496
COMMUNICATION AND THEATRE ARTS

Gary Edgerton, Chair
Deborah Meltner, Chief Departmental Advisor

The Department of Communication and Theatre Arts offers two Bachelor of Arts majors, one in communication (with emphasis areas in corporate communication, general communication, international and intercultural communication, interpersonal and small group communication, mass media, persuasion and critical thinking, public relations, and theatre) and one in theatre/dance (with emphasis areas in either theatre or dance). A Bachelor of Science in communication is offered with emphasis areas in corporate communication, general communication, international and intercultural communication, interpersonal and small group communication, mass media, persuasion and critical thinking, public relations, and professional communication (available via distance learning). A Bachelor of Fine Arts in acting is also offered. Minors are offered in communication, theatre/dance with a theatre specialization, and theatre/dance with a dance specialization. Students must receive a grade of C (2.00) or better in all courses that count toward these majors and minors. All majors must fulfill the requirements of the College of Arts and Letters, and are also required to participate in the department's senior assessment programs. Students must complete at least one-half of their hours in the major at Old Dominion University.

Bachelor of Arts or Bachelor of Science—Communication Major

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (COMM 101R required)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (BS requires STAT 130M)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Proficiency through 202 level for BA only and not met by associate degree; competence at the 102 level for BS students)</td>
<td>0-12</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

Social Science (Comm 200S may not be used to satisfy this requirement) | 6 |

Departmental Requirements

Majors must have a C or better in all courses counted toward the major. At least one half of the hours completed in the major must be completed at Old Dominion University. Majors must also complete at least one writing-intensive course in the major from COMM 315W, 335W, 400W, 412W, 447W, 470W, or 471W.

All B.S. students in communication with an emphasis in professional communication who enter the program with the 2002-2004 catalog must maintain a C or better in all courses counted toward the major (professional communication students who are subject to an earlier catalog can retain the C- minimum).

Communication Core—(B.A. 9 hours; B.S. 18 hours)

COMM 101R Public Speaking (satisfies oral communication requirement) | 3 |
COMM 200S Intro to Human Communication | 3 |

In addition, B.A. Only:

COMM 335W Rhetorical Criticism | 3 |
or COMM 445W Communication Analysis and Criticism | 3 |

In addition, B.S. Only:

COMM 302 Research Methods I | 3 |
COMM 401 Communication Theory | 3 |
and six hours of approved social science courses | 6 |

Additional Communication Hours: 30 hours total for B.A. and 27 hours total for B.S., 24 of which must be at the 300-400 level selected from the following concentration areas and electives.

Concentrations (24 hours minimum)

It is recommended that students complete a minimum of three hours from the foundation courses in the concentration area of interest.

Corporate Communication

1. Foundations: COMM 312, 315W, 351, 395/495, 400W

International and Intercultural Communication

2. Popular Culture: COMM/FLET 300, COMM 340, COMM 444/FLET 445, COMM/WMST 450, COMM 471W, COMM/WMST 495

Interpersonal and Small Group Communication

1. Foundations: COMM 312, 314, 412W

Mass Media

1. Foundation: COMM 360
2. Media Contexts: COMM 303, 340, 364, 365, 448

4. Production: THEA 340, 342, THEA/COMM 370, THEA/COMM 380, THEA/COMM 480, or 300-400 level MCM courses at Norfolk State University

Persuasion and Critical Thinking

1. Foundations: COMM 333, 335W, 337, 445

Public Relations

1. Foundations: COMM 303, 304, 335, 337
3. Organizational Applications: 351, 412W, 421

Theatre (B.A. Only)

1. Foundations: THEA 342, 343, 344, 442
2. Production: THEA 340, 345, THEA/COMM 370, THEA/COMM 380, THEA/COMM 480
4. Topics in Film: COMM/FLET 300, COMM 444/FLET 445, COMM 470W, 471W, 473, 479, 481, COMM/WMST 495
5. Topics in Theatre: THEA 441, 445, 447

Please note: Students who are pursuing a double major in communication and theatre may use a maximum of two courses in both majors.

General Communication

24 hours of 300-400 level COMM courses from any combination of courses from the different emphasis areas, plus six additional hours from emphasis or elective hours in COMM.

Electives (to not include required courses for B.A. or B.S.)

COMM 103R Voice and Diction | 3 |
COMM 112R Introduction to Interpersonal Communication | 3 |
COMM 302 Research Methods I | 3 |
COMM 388 Internship | 3 |
COMM 369 Research Practicum | 3 |
COMM 401 Communication Theory | 3 |
COMM 402 Research Methods II | 3 |
COMM 469 Communication Education Practicum | 3 |

Internships, Practica, and Special Topics Classes

Students may apply only three credit hours of COMM 368 Internship toward the major in communication. In addition, students may apply only six credits total from the following classes toward the major: COMM 368...
Internship, COMM 369 Research Practicum, and COMM 469 Communication Education Practicum. Special Topics in Communication courses (COMM 395, 396, 495, 496) and Communication Tutorials courses (COMM 497) may be included in a given emphasis when and where appropriate.

**B.S. in communication with an emphasis in professional communication** is available for distance learning students through TELETECHNET. Distant students who have completed a university parallel associate degree can complete two additional years of coursework at the University's TELETECHNET sites in order to earn a B.S. Distant students **without** a university parallel associate degree must complete the lower-division general education requirements.

**Professional Communication Core—(15 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 300W</td>
<td>Interdisciplinary Theory &amp; Concepts</td>
<td>3</td>
</tr>
<tr>
<td>COMM 302</td>
<td>Communication Research Methods I</td>
<td>3</td>
</tr>
<tr>
<td>COMM 305</td>
<td>Foundations of Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 327W</td>
<td>Advanced Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 325</td>
<td>Intro to Rhetorical Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Organizational Foundations:** 12 hours from CS 300, MGMT 325, 340, 451, MKTG 311, 402, 411, PHIL 303, PSYC 303, 343, 344, 345 (meets the upper-division general education requirement)

**Additional Hours in Communication:** 12 hours from COMM 303, 304, 312, 314, 315W, 333, 351, 355, 360, 368, 395, 400W, 412W, 421, 447W, 448, 456, 467, 475, 476, 477, 478, 481, 485

**Additional Hours in English:** six hours from ENGL 324W, 335, 350, 368, 380, 381, 395, 396, 427W, 435W, 468, 477, 481, 484, 485W, 486, 489, 495, 496

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major (met in the major for professional communication emphasis only).

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Minor in Communication**

The requirements for a minor in communication are as follows:

1. Six hours of lower-division communication courses to include COMM 101R or 103R, and 203.
2. Twelve hours of upper-division communication courses at the 300- and 400-level (excluding COMM 367, 375, 376, 475, 476; 368 may be used only once).

Students must complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Bachelor of Arts–Theatre and Dance Major**

Marilyn Marloff, Chief Departmental Advisor for Dance
Erline Hendrix, Chief Departmental Advisor for Theatre

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>(Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>(Satisfied by THEA 242 for theatre majors)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>(Proficiency through 202 level)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>(Satisfied by ECI 304 for dance education and theatre education majors)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>(Theatre majors may not use THEA 241A; dance majors may not use DANC 185A; theatre education majors must take DANC 185A; dance education majors must take THEA 241A)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
<td>3</td>
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<tr>
<td>Philosophy</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td></td>
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</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required. (Dance education and theatre education majors should take BIOL 108N-109N to meet the eight-hour Natural Science requirement)

**Departmental Requirements**

**Social Sciences (COMM 200 required)**

**Theatre Concentration:**

THEA 185A Dance and its Audience
THEA 241A The Theatre Experience
THEA 242 Acting I (meets oral communication requirement)
THEA 247 Introduction to Stage Costumes
THEA 248 Introduction to Stage Makeup
THEA 343 Theatre History
THEA 344 Theatre History
THEA 442 Principles of Directing
THEA 449W Script and Performance Analysis
THEA 499 Senior Project
THEA Activities 4 hours required; 2-4 hours must be earned through off stage production participation

**THEA/DANC electives**

**Theatre Concentration – Digital Film Making Emphasis:**

THEA 189 The Creative Self
THEA 241A The Theatre Experience
THEA 242 Acting I
THEA 244 Introduction to Scenery and Lighting
THEA 247 Introduction to Stage Costumes
THEA 248 Introduction to Stage Makeup
THEA 343 OR 344 History of Theatre I OR II
THEA 370 The Video Project
THEA 442 Principles of Directing
THEA 470 Film as Communication
THEA 479 American Film History OR THEA 479W American Film History
THEA 499 Senior Project
THEATRE ACTIVITIES 4 hours required, 2-4 hours must be earned through off stage production participation

**THEA ELECTIVES**

Digital film emphasis area students must have a minor in film studies. Students may not use the same film courses to fulfill requirements for the major and minor.

**Dance Concentration:**

DANC 350 Dance Improvisation
DANC 360 Rhythmic Analysis
DANC 370 Dance Composition
DANC 387 Dance Repertory and Performance I
DANC 388 Dance Repertory and Performance II
DANC 389W 20th Century Dance History
DANC 393 Anatomy/Kinesiology for Dance
DANC 489 Teaching Principles
DANC 499 Senior Project
THEA 241A Theatre Experience
16 credits from DANC 201, 302, 303, 404, 405, or 406
10 credits from DANC 211, 312, 313, 414, 415, or 416
DANC/THEA electives

Minimum 26 credits of technique to include 16 credits of ballet and 10 hours of modern dance. Students may substitute two hours each from the ballet and modern requirements for jazz. Activities courses may not be used to fulfill these requirements.

Minimum three credits of practicum experience to include two hours of repertory and performance and one hour of senior project.

Minimum eight credits of theatre and dance electives (not to exceed four hours of technique).
As a requirement to graduate, dance majors must achieve 400-level proficiency in ballet technique and modern technique. (Specifically, dance majors must pass DANC 404 and 414.) The continued maintenance of technical proficiency is required. For further information, consult the dance handbook.

Theatre Education Concentration:

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C in the content area and C- in the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major with no grade less than C and the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests if available. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C in the minor and minor C- in the professional education core; and completion of a minimum of 126 credit hours.

The curriculum is as follows:

DANC 185A Dance and its Audience 3
THEA 189 The Creative Self 3
THEA 241A The Theatre Experience 3
THEA 244 Introduction to Scenery and Lighting 3
THEA 242 Acting I (meets oral communication perspective) 3
THEA 247 Introduction to Stage Costumes 2
THEA 248 Introduction to Stage Makeup 2
THEA 343 Theatre History 3
THEA 344 Theatre History 3
THEA 442 Principles of Directing 3
THEA 449W Script and Performance Analysis 3
THEA 489 Methods of Teaching Theatre 3
THEA 490 Theatre Education Practicum 1
THEA 499 Senior Project 1
THEA Activities 4 hours required; 2-4 hours must be earned through off stage production participation 4
THEA/DANC electives: at least three elective hours should be at the 300-400 level and focus on performance or design/theatre technology 7

Professional Education Core:

ECI 301 Social Cultural Foundations of Education 3
ECI 304 Educational Applications of Computers (meets computer skills requirement) 3
ECI 360 Classroom Management and Discipline 2
ECI 408 Reading and Writing in Content Area 3
ECI 485 Student Teaching 12
ESSE 406 Special Needs Children-General Ed 3
ESSE 413 Fundamentals-Human Growth and Development 3

Theatre Education Licensure Only: Candidates who have already earned an undergraduate degree in the theatre may seek licensure only. Information on applying for licensure can be obtained from the Darden College of Education or the theatre education program advisor. Students must have completed or must complete equivalencies for all course work required for the theatre major, as well as complete all Professional Education core classes required for undergraduate theatre education majors. The theatre advisor will determine which transferable courses will meet the cognate program requirements and which theatre and professional courses must be completed for licensure. All content area courses must be completed with a grade of C or better, and all professional education courses must be completed with a grade of C- or better. A minimum cumulative grade point average of 2.75 is required for continuance and licensure. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or State Board of Education-approved SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Dance Education Concentration:

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C in the content area and C- in the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major with no grade less than C and the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests if available. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C in the major and minor and C- in the professional education core; and completion of a minimum of 120-132 credit hours (depending on foreign language proficiency).

The curriculum is as follows:

12 credits from DANC 201, 302, 303, 404, 405, or 406 12
10 credits from DANC 211, 312, 313, 414, 415, or 416 10
DANC 321 Introduction to Jazz Dance 2
DANC 322 Jazz 2 2
DANC 350 Dance Improvisation 1
DANC 360 Rhytmic Analysis 1
DANC 370 Dance Composition 1 2
DANC 387 Dance Repertory and Performance 1 1
DANC 388 Dance Repertory and Performance 2 1
DANC 389W Twentieth Century Dance History 3
DANC 393 Anatomy and Kinesiology for Dance 3
DANC 489 Principles of Teaching Dance 2
DANC 499 Senior Project 1
PE 217 Educational Problems and Dance 1
EXSC 340 Prevention and Care of Injuries 3

As a requirement to graduate, dance majors must achieve 400-level proficiency in ballet technique and modern technique. (Specifically, dance majors must pass DANC 404 and 414.) The continued maintenance of technical proficiency is required. For further information, consult the dance handbook.

Professional Education Core:

ECI 301 Social Cultural Foundations of Education 3
ECI 304 Educational Applications of Computers (meets computer skills requirement) 3
ECI 360 Classroom Management and Discipline 2
ECI 408 Reading and Writing in Content Area 3
ECI 485 Student Teaching 12
ESSE 406 Special Needs Children-General Ed 3
ESSE 413 Fundamentals-Human Growth and Development 3
UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major. (Dance education and theatre education majors satisfy this requirement through the Professional Education core requirements.)

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Theatre and dance majors: Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minor in Theatre and Dance—Theatre Specialization

For a minor in theatre arts with a theatre specialization, the student must complete a minimum of 18 THEA hours, including:
1. THEA 241A.
2. Minimum of 12 hours at the 300 and 400 levels, with prior agreement by the department. Students must complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.
3. Three additional THEA hours, to include at least one hour of theatre activities credit.

Minor in Theatre and Dance—Dance Specialization

For a minor in theatre arts with a dance specialization, the student must complete 18 DANC hours including:
1. DANC 185A.
2. Minimum of 12 hours at the 300 and 400 levels with prior agreement by the department. Students must complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.
3. Three additional DANC hours at any level.

Bachelor of Fine Arts—Acting Major

Chris Hanna, Director of Theatre Program

Admission

Students will be eligible to enter the B.F.A. in acting program after having completed ENGL 110C and 111C with a grade of C or better. Students will be admitted to the B.F.A. program through an audition process administered by the faculty.

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written communication (grade of C required in ENGL 110C and ENGL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral communication (satisfied in the major by THEA 242)</td>
<td>3</td>
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<tr>
<td>Mathematics</td>
<td>3</td>
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<tr>
<td>Computer Skills</td>
<td>3</td>
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<tr>
<td>Foreign Language</td>
<td>0-6</td>
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<tr>
<td>Fine and Performing Arts (satisfied in the major by DANC 185A)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
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<tr>
<td>Philosophy</td>
<td>3</td>
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<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
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<td>Social Science</td>
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<table>
<thead>
<tr>
<th>Major courses (77 credit hours)</th>
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<tbody>
<tr>
<td>DANC 185A Dance and its Audience</td>
<td>3</td>
</tr>
<tr>
<td>THEA 189 The Creative Self</td>
<td>3</td>
</tr>
<tr>
<td>DANC 211 Modern Dance Technique I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 241A The Theatre Experience</td>
<td>3</td>
</tr>
<tr>
<td>THEA 242 Acting I (meets oral communication requirement)</td>
<td>3</td>
</tr>
<tr>
<td>THEA 244 Introduction to Scenery and Lighting</td>
<td>3</td>
</tr>
<tr>
<td>THEA 246 Stage Combat</td>
<td>1</td>
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<tr>
<td>THEA 247 Intro to Stage Costume</td>
<td>2</td>
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<td>THEA 248 Intro to Stage Makeup</td>
<td>2</td>
</tr>
<tr>
<td>THEA 320 Auditioning Techniques</td>
<td>1</td>
</tr>
<tr>
<td>THEA 342 Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THEA 343 History of Theatre</td>
<td>3</td>
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</table>

| THEA 344 Theatre History        | 3       |
| THEA 347 Movement for the Actor | 3       |
| THEA 348 Camera Acting          | 1       |
| THEA 350 The Spoken Text        | 3       |
| THEA 360 Voice for the Stage    | 3       |
| THEA 368 Internship             | 3       |
| THEA 442 Principles of Directing| 3       |
| THEA 443 Acting III             | 3       |
| THEA 449W Script and Performance Analysis | 3 |
| THEA 460 Voice for the Stage II | 3       |
| THEA 499 Senior Project         | 1       |

THEA Activities 6 hours, of which 4 must be earned through performance and 2 must be earned through off stage production participation | 6       |

THEA electives | 13      |

UPPER-DIVISION GENERAL EDUCATION

Option A: Approved minor, 12-24 hours; also second degree or second major.

Option B: Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall, 121 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of senior assessment. Students must have a C or better in all courses counted toward the major. At least half of the hours completed in the major must be completed at Old Dominion University. Students must audition annually for continuation in the B.F.A. program in acting.

ENGLISH

Charles E. Wilson, Jr., Chair

The Bachelor of Arts in English requires a minimum of 43 hours in English, in addition to English courses taken to satisfy General Education requirements (ENGL 110C, 111C, 112L or 144L). Upon completion of ENGL 111C, intended majors should apply to the chief departmental advisor for English to declare the major. Once admitted to the program, students take courses in two areas: the core (foundation courses) and the emphasis. The core (22 hours) consists of a broad range of courses in several areas of English. The emphasis (15 hours) is one of six areas of concentration (creative writing, journalism, linguistics, literature, professional writing, teaching) within the overall Bachelor of Arts program and allows the student to pursue the area of depth. In addition, students in all emphases have two free electives (6 hours) in English at the 300 or 400 level. Because requirements sometimes change, students should consult the latest course requirement lists in BAL 207. All majors must take an English writing intensive (W) course to graduate. Majors in the literature, creative writing, and linguistics emphases should consult their English advisor regarding the writing intensive requirement.

Bachelor of Arts—English Major

Judith Doumas, Chief Departmental Advisor

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (COMM 101R, 103R, 112R)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (BA students must have competence through the 202 level)</td>
<td>0-12</td>
</tr>
<tr>
<td>Computer Skills (may be satisfied with ENGL 250; teacher education majors satisfy the requirement with ECI 304)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
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<tr>
<td>Literature</td>
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<tr>
<td>Philosophy</td>
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<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
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<tr>
<td>Social Science</td>
<td>6</td>
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<thead>
<tr>
<th>Major courses (22 hours)</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>English advisor regarding the writing intensive requirement.</td>
<td></td>
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</tbody>
</table>

Bachelor of Arts—English Major

Judith Doumas, Chief Departmental Advisor

LOWER DIVISION GENERAL EDUCATION

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<td>Social Science</td>
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<thead>
<tr>
<th>Foundation courses (22 hours)</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 200 Intro to English Studies</td>
<td>1</td>
</tr>
</tbody>
</table>
ENGL 301 or 302 British Literature (1 course) 3
ENGL 340, 342, 345, or 346 American Literature (1 course) 3
ENGL 360, 363, 393, or 493 World Literature (1 course) 3
ENGL 303 or 304 Shakespeare (1 course) 3
ENGL 459, 463, 465 or 468W Focus (1 course) 3
ENGL 325, 333, or 370 Analytics (2 courses) 6

Open Electives (6 hours)
ENGL 300- or 400-level (2 courses) 6

Emphasis Courses (15 hours)
Select one of the following options:

Creative Writing
ENGL 300, 456, and 457 9
Select two courses from ENGL 351, 352, 353, 451, 452, 454, 476, 477, 495/496 (linguistics-related independent study) 6
Please consult the department advisor about the writing intensive requirement. All majors must take an English writing intensive (W) course to graduate.

Journalism
ENGL 380, 483W, 484, and 486 12
Select one course from ENGL 335, 368, 454, 485W 3

Linguistics
ENGL 350 3
Select three courses from ENGL 371W, 440, 444, 450, 476, 477, 495/496 (linguistics-related independent study) 9
Select one course from approved electives at the 300 and 400 level, including Anthropology, English (especially rhetoric), Foreign Languages (not FLET), Internship 3

Note: Linguistics emphasis students must take ENGL 370 in the Analytics portion of the core. All majors must take an English writing intensive (W) course to graduate.

Literature
Select one course from ENGL 337, 403, 412, 421, 423, 433 Period 3
Select one course from ENGL 312, 336, 349, 361, 416, 432, 438, 447, 448, 460, 461, 492 Genre 3
Select one additional literature course at the 400 level 3
Note: Among the above 9 hours, 3 must be in pre-1800 literature and 3 must be in post-1800 literature.
Select one additional course from ENGL 301 and 302 3
Select one additional course from ENGL 340, 342, 345, 346 3
Note: Literature emphasis students must take ENGL 333 in the Analytics portion of the core. Please consult the department advisor about the writing intensive requirement. All majors must take an English writing intensive (W) course to graduate.

Professional Writing
Select 5 courses from ENGL 325, 327W, 334W, 335, 368, 381, 427W, 435W, 439W, 454, 468, 481, 486 15
All majors must take an English writing intensive (W) course to graduate.

Teaching
(See below, Bachelor of Arts—English Major with Teaching Licensure in English)

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Arts—English Major with Teaching Licensure in English

This program leads to eligibility for teacher licensure in Virginia. Licensure in English prepares students for a full range of secondary school teaching assignments. The program is accredited by the State of Virginia; in addition, Virginia has licensure reciprocity agreements with thirty other states, should the student leave Virginia.

The program combines the usual requirements of a college major and minor. Students take courses in the English department (ENGL) of the College of Arts and Letters and Educational Curriculum and Instruction department (ECI) of the Darden College of Education. Students receive a Bachelor of Arts in English.

Admission. Students wanting to be admitted to the teacher education program must complete the second level of English composition (ENGL 111C), have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate Praxis II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II English Language, Literature and Composition Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major and professional education core; and completion of a minimum of 132 credit hours.

Course requirements are as follows:

LOWER DIVISION GENERAL EDUCATION
See list under Bachelor of Arts in English above.

Foundation courses (22 hours)
ENGL 200 Intro to English Studies 1
ENGL 301 or 302 British Literature (1 course) 3
ENGL 345 or 346 American Literature (1 course) 3
ENGL 360, 363, 393, or 493 World Literature (1 course) 3
ENGL 303 or 304 Shakespeare (1 course) 3
ENGL 459, 463, 465, or 468W Focus (1 course) 3
ENGL 325, 333, or 370 Analytics (2 courses) 6

Elective courses (6 hours)
ENGL 300 or 400-level (2 courses) 6
Teaching students are encouraged to choose either a film or a journalism course for one of their two electives.

Emphasis courses (15 hours)
ENGL 325, 333, or 370 Analytics (1 additional course) 3
ENGL 345 or 346 American literature (1 additional course) 3
ENGL 327W Advanced Composition 3
ENGL 350 Aspects of English Language 3
ENGL 455 Teaching of Composition Grades 6-12 3

Professional Education Courses (33 hours)
ECI 301 Social Cultural Foundations of Education 3
ECI 304 Education Applications of Computers (satisfies computer skills requirement) (prerequisite for ECI 451) 3
ECI 360 Classroom Management and Discipline 2
ECI 408 Reading and Writing in Content Area 3
ECI 451 Developing Instructional Strategies: English 4
ECI 485 Student Teaching 12
ESSE 406 Special Needs Children-General Ed 3
ESSE 413 Fundamentals-Human Growth and Development 3

UPPER DIVISION GENERAL EDUCATION
Satisfied through professional education sequence.

Certificate in Professional Writing
This certificate requires 12 hours of professional writing courses from ENGL 325, 327W, 334W, 335, 368, 381, 427W, 435W, 439W, 468, 481, and 486.
**400-Level Courses**

Courses numbered in the 400s are more advanced than those numbered in the 300s; requirements in reading, research, and writing are more extensive and rigorous.

**Minor in English**

The English minor consists of 15 hours of 300- and 400-level courses, three hours of which must be at the 400 level. A general minor and five minors in areas of emphasis are offered. Regardless of emphasis, the curriculum is still called a minor in English.

1. English: 15 hours from sections I, II, III, IV, or V (see Courses of Instruction).
2. Creative Writing: 15 hours from section II (see Courses of Instruction).
3. Journalism: 15 hours from section IV (see Courses of Instruction).
4. Linguistics: 15 hours from section III (see Courses of Instruction).
5. Literature and Film: 15 hours from section V (see Courses of Instruction).

For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement at Old Dominion University.

**Assessment Test**

All students pursuing an undergraduate degree in English must be prepared to participate in an English department assessment exercise in their last semester before graduating. The CDA will provide information about this exercise.

**Advanced Placement**

Students seeking English credits by examination should confer with the chief departmental advisor.

**Research Practicum**

Students who wish to combine research and real-world experience can take ENGL 369 Research Practicum. See the description in the Courses of Instruction section for prerequisites.

**Graduate Programs in English**

There are three graduate programs in the English department: Master of Arts—English Major, Master of Arts—Applied Linguistics Major; and Master of Fine Arts—Creative Writing Major. Each program has its own guidelines and admissions policy.

**Master of Arts—English**

David Metzger, Graduate Program Director

The Master of Arts program in English develops professional competency in literary analysis and in writing. The program offers emphases or options in literature, the teaching of English, and professional writing. The program prepares students for further graduate study in English; for professional writing and editing; for teaching in secondary schools and colleges; for further study in such fields as anthropology, law, psychology, and philosophy; for careers in government and industry; and for other professions requiring analytical, literary, linguistic, or writing skills.

**Admission**

The student must initially meet all general University admission requirements. For regular admission, students must generally have at least 24 undergraduate hours in English, or a closely related field, with a grade point average of 3.0 or better. However, students applying to the professional writing concentration (see professional writing option) may have little or no undergraduate course work relating to English, provided that they have an average of 3.0 or better in their undergraduate major. Students applying to the professional writing concentration must also, in addition to other admissions materials, provide a writing sample, preferably of previous professional work, that demonstrates their preparation for graduate-level writing.

International students must submit scores from the TOEFL examination, a sample of scholarly writing, and three recommendations, at least one of which evaluates ability in English. For regular admission, students must score 230 on the computer-based TOEFL (the equivalent of 570 in the older, paper-based score scale). Students may be admitted provisionally with a TOEFL score of 213 (550 in the paper-based scale), but must attain the scores required for regular admission after 12 hours of graduate work.

**Writing Proficiency Policy**

Students in the English graduate program must demonstrate a high level of skill in written expression.

**Requirements**

The Master of Arts degree in English requires 30 credit hours and the passing of a comprehensive oral examination. No more than 12 credit hours on the 500 level may be counted toward a degree. An identifiable unifying principle is required for each student's program.

**Literature Option**

Imtiaz Habib, Coordinator

This option requires:

- Three hours in British Literature before 1800
- Three hours in British Literature after 1800 or Postcolonial Literature
- Three hours in American Literature
- Six hours of Research and Theory, ENGL 600 and 663
- Three hours in American Literature
- Twelve hours of electives, at least six hours of which must be in literature

**Graduate Certificate in Literature**

Easily completed in one calendar year, this certificate gives students who already hold at least a master's degree in a different field the 18 hours of graduate study in literature that are the minimum requirement for teaching that subject at the post-secondary level in Virginia. Requirements are:

- Three hours in British Literature before 1800
- Three hours in British Literature after 1800 or Postcolonial Literature
- Three hours in American Literature
- Nine hours of electives in literature (which may include ENGL 600 and 663)

NOTE: at least nine of the 18 hours must be at the 600-level.

**Teaching of English Option**

Edward Jacobs, Coordinator

This option requires:

- Three hours in British Literature before 1800
- Three hours in British Literature after 1800 or Postcolonial Literature
- Three hours in American Literature
- Three hours of Research and Theory, ENGL 600
- Three hours of Writing Pedagogy from ENGL 555 or 664
- Three hours of Teaching Colloquium, ENGL 687
- Three hours of Rhetoric from ENGL 667 or 669
- Three hours of Linguistics
- Six hours of electives
Graduate Certificate in the Teaching of Writing

Easily completed in one calendar year, this certificate gives students who already hold at least a master's degree in a different field the 18 hours of graduate study in the teaching of writing that are the minimum requirement for teaching that subject at the post-secondary level in Virginia. Requirements are:

- Three hours of Rhetoric from ENGL 667 or 669
- Three hours of Writing Pedagogy, ENGL 664
- Three hours of Teaching Colloquium, ENGL 687
- Nine hours of English electives in Rhetoric, Professional Writing, Journalism, Linguistics, or Creative Writing

NOTE: at least nine of the 18 hours must be at the 600-level.

Professional Writing Option (Concentration)

Carl Whithaus, Coordinator

Designed for those who seek an intense investigation into professional writing, rhetoric, and composition, the concentration requires:

- Nine hours from:
  - ENGL 539 Writing in Electronic Environments
  - ENGL 667 Classical Rhetoric
  - ENGL 669 Modern Rhetoric
  - ENGL 685 Writing Research
- Nine hours from:
  - ENGL 527 Writing in the Disciplines
  - ENGL 553 Management Writing
  - ENGL 593 Writing in Electronic Environments
  - ENGL 594 Creative Nonfiction
  - ENGL 581 Advanced Public Relations
  - ENGL 583 Advanced News Reporting
  - ENGL 584 Feature Story Writing
  - ENGL 585 Editorial and Persuasive Writing
  - ENGL 586 Media Law and Ethics
  - ENGL 664 Teaching College Composition
  - ENGL 665 Teaching Writing with Technology
  - ENGL 666 Rhetoric(s) in/of Cyberspace(s)
  - ENGL 667 Classical Rhetoric
  - ENGL 668 Graduate Internship and Project in Professional Writing
  - ENGL 669 Modern Rhetoric
  - ENGL 685 Writing Research
  - ENGL 686 Introduction to Rhetorical Studies
  - ENGL 687 Colloquium for Teachers of English
  - ENGL 695 Topics (when topic related to professional writing)

Twelve hours of approved electives

Professional Writing Option (Emphasis)

Designed for those who want to integrate professional writing, rhetoric, and composition with literary studies, the emphasis requires:

- Twelve hours from:
  - ENGL 527 Writing in the Disciplines
  - ENGL 535 Management Writing
  - ENGL 539 Writing in Electronic Environments
  - ENGL 554 Creative Nonfiction
  - ENGL 581 Advanced Public Relations
  - ENGL 583 Advanced News Reporting
  - ENGL 584 Feature Story Writing
  - ENGL 585 Editorial and Persuasive Writing
  - ENGL 586 Media Law and Ethics
  - ENGL 664 Teaching College Composition
  - ENGL 665 Teaching Writing with Technology
  - ENGL 666 Rhetoric(s) in/of Cyberspace(s)
  - ENGL 667 Classical Rhetoric
  - ENGL 668 Graduate Internship and Project in Professional Writing
  - ENGL 669 Modern Rhetoric
  - ENGL 685 Writing Research
  - ENGL 686 Introduction to Rhetorical Studies
  - ENGL 687 Colloquium for Teachers of English
  - ENGL 695 Topics (when topic related to professional writing)

Graduate Certificate in Professional Writing

Easily completed in one calendar year, this certificate is designed for professionals who want to supplement their undergraduate degrees and sharpen their writing and communication skills. The certificate requires:

- Twelve hours from:
  - ENGL 527 Writing in the Disciplines
  - ENGL 535 Management Writing
  - ENGL 539 Writing in Electronic Environments
  - ENGL 554 Creative Nonfiction
  - ENGL 581 Advanced Public Relations
  - ENGL 583 Advanced News Reporting
  - ENGL 584 Feature Story Writing
  - ENGL 585 Editorial and Persuasive Writing
  - ENGL 586 Media Law and Ethics
  - ENGL 664 Teaching College Composition
  - ENGL 665 Teaching Writing with Technology
  - ENGL 666 Rhetoric(s) in/of Cyberspace(s)
  - ENGL 667 Classical Rhetoric
  - ENGL 668 Graduate Internship and Project in Professional Writing
  - ENGL 669 Modern Rhetoric
  - ENGL 685 Writing Research
  - ENGL 686 Introduction to Rhetorical Studies
  - ENGL 687 Colloquium for Teachers of English
  - ENGL 695 Topics (when topic related to professional writing)

Thesis and Oral Examination for M.A. in English

Master of Arts Thesis Option. The opportunity to undertake a long research or other appropriate project is available to students in the Master of Arts–English Major program. Writing a thesis may be of particular benefit to those who contemplate further graduate work or who have a strong desire to pursue a single topic in great depth. Under the guidance of an advisor (a member of the graduate faculty), the student may earn six hours of credit for a completed, approved thesis.

Master of Arts Oral Comprehensive Examination. During the first three weeks of the semester in which they intend to graduate, students must contact the graduate program director in English to schedule their comprehensive examination. The oral comprehensive examination covers each student's particular program of study. Based on the courses taken by the student, the examination tests the student's mastery of materials and concepts, interpretive skills, and ability to make critical distinctions and connections. The examination of a thesis student will also cover the thesis and its related areas.

Students who fail the oral comprehensive examination may take the test one more time in a different semester. Students who fail a second time will no longer be eligible to receive the Master of Arts in English from Old Dominion University.

Accelerated B.A. and M.A. in English Program

By allowing exceptionally successful students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this program makes it possible for such students to earn both a B.A. and M.A. in English within five years.

Admission Requirements

To be admitted to the program, students must have completed at least 60 undergraduate hours, including at least nine hours in English courses at the 300-level or above. At the time of admission, they must have an overall GPA of 3.00 or better, and a GPA of 3.30 or better in all English courses.
Admission Procedures

Interested students who meet the admission requirements should apply to the graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the graduate program director, students will:

1. Officially declare themselves an undergraduate English major with the English Department’s undergraduate chief departmental advisor.
2. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student’s undergraduate and graduate advising files.
3. Apply, during their senior year, to the Office of Admissions for admission to the M.A. in English program.

Once students have been awarded their B.A. degree and fulfilled all regular admission requirements for the M.A. in English, they will be officially admitted into the M.A. program, in keeping with program requirement #3 (see below).

Program Requirements

Students in the program will fulfill all normal admission and curricular requirements for both a B.A. in English and an M.A. in English, with the following exceptions:

1. Students in the program may count up to 12 hours of graduate courses taken as an undergraduate for which they have earned a grade of B (3.0) or better toward both the B.A. and M.A. in English degrees.
2. Students in the program may substitute English graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major:
   A. Any 500-level course that is cross-listed with a 400-level course may be substituted for the 400-level course.
   B. Students may substitute 600-level courses for undergraduate courses according to the following list:

   - ENGL 600 Intro Res & Crit for ENGL 333 Interp Lit Works
   - ENGL 605 Film Theory for ENGL 425 Directors in Context
   - ENGL 612 Renaissance Lit for ENGL 412 Renaissance in England
   - ENGL 615 Shakespeare for ENGL 303 Shakespeare’s Hist & Comedies or ENGL 304 Tragedies & Poetry
   - ENGL 632 18th Century Brit Lit for ENGL 421 Brit Lit 1660-1800 or ENGL 432 Origins of Brit Novel
   - ENGL 641 19th Century Brit Lit for ENGL 432 Romantic Movement in Brit or ENGL 433 Victorian Lit
   - ENGL 645 20th Century Brit Lit for ENGL 438 20th Century Brit Novel
   - ENGL 647 Postcolonial Literature for ENGL 459 New Lits in English
   - ENGL 655 Topics in World Lit for ENGL 361/363 World Masterpieces I & II, ENGL 393 World Novel, or ENGL 493 Contemporary World Novel
   - ENGL 656 Am Lit to 1810 for ENGL 345 Am Lit to 1860
   - ENGL 657 Am Lit 1810-70 for ENGL 447 Am Novel to 1910
   - ENGL 658 Am Lit 1870-1945 for ENGL 346 Am Lit since 1860
   - ENGL 659 Am Lit 1945-pres for ENGL 349 Contemp Am Novel
   - ENGL 664 Teaching College Comp for ENGL 455 Teaching Comp 4-12
   - ENGL 666 Writing in Cyberspace for ENGL 439W Electronic Writing
   - ENGL 685 Writing Research for ENGL 427W Writing in the Disciplines
   - ENGL 699 Med / Rhet for ENGL 325 Intro Rhet Studies or ENGL 427W Writing in the Disciplines
   - ENGL 671 Lang & Communication Across Cultures for ENGL 371W Communication across Cultures
   - ENGL 672 Syntax for ENGL 350 Aspects of English Language
   - ENGL 691/692 Graduate Seminar for 400-level literature elective
   - ENGL 695 Topics in English for 400-level literature elective or ENGL 495/496 Topics in English

C. Students in the program may make a written petition for other substitutions to the graduate program director, who will consider them in consultation with the chief departmental advisor and the instructor(s) of the courses involved.

3. Students who have completed at least six hours of graduate courses upon attaining senior standing (completion of 90 hours) and who have earned a GPA of 3.70 or better in those courses will not be required to take the Graduate Record Exam (GRE) for admission to the M.A. program. Otherwise, in keeping with normal admission requirements for the M.A. in English, students will take the GRE during their senior year as an undergraduate.

NOTES:
1. In accordance with University policy, up to 21 hours of graduate courses taken as an undergraduate may be counted toward the B.A. in English degree. However, only 12 hours of graduate courses taken as an undergraduate may also be counted toward the M.A. degree in English.
2. Like students in the regular M.A. in English program, students in the accelerated B.A./M.A. in English degree may count no more than 12 hours at the 500-level toward their M.A. degree. Students are strongly advised against taking all 12 of those 500-level hours as an undergraduate, since doing so will limit their scheduling flexibility subsequently.
3. Students in this program may earn a B.A. in English and M.A. in English degrees in different emphasis areas. However, in order to avoid taking a course or courses that fulfill requirements for one degree but not the other, students considering this possibility should consult carefully with the graduate program director.

Master of Arts–Applied Linguistics

Janet M. Bing, Graduate Program Director

The Master of Arts in applied linguistics prepares students to pursue advanced graduate study or to teach in colleges, adult education programs, businesses, private schools, or institutions in other countries. The program’s two emphases are teaching English as a second language (TESOL) and sociolinguistics. Students in the program may also earn the Commonwealth of Virginia Endorsement for English as a Second Language.

Admission

In addition to general University admission requirements, applicants must have taken at least 12 hours of upper-level English, linguistics, or foreign language courses. The Graduate Record Examination (GRE), General Test, is required of all applicants. International students must submit scores from the TOEFL examination (a minimum of 570 for regular admission, 550 for provisional on the written exam; those taking the computer-based exam must have 230 for regular admission and 213 for provisional), a sample of scholarly writing, and three recommendations, one of which evaluates proficiency in English. (For non-native speakers of English, there are also alternative ways of demonstrating English proficiency such as the University Bridge Program.) After 12 hours of graduate work, international students must meet the TOEFL requirement for regular admission.

Requirements

The M.A. in applied linguistics requires 33 credit hours and the passing of an oral comprehensive examination. No more than 12 hours may be taken on the 500 level.

TESOL Emphasis

The following five courses are required:

- ENGL 540 General Linguistics
- ENGL 670 Methods & Materials in TESOL
- ENGL 671 Phonology
- ENGL 672 Syntax
- ENGL 675 Practicum (Student Teaching)

Four courses must be chosen from the following:

- ENGL 544 History of the English Language
- ENGL 550 American English
- ENGL 576 Problems of Language
- ENGL 577 Language, Gender, and Power
- ENGL 673 Discourse Analysis
- ENGL 674 Internship in Applied Linguistics
- ENGL 676 Semantics
- ENGL 677 Language and Communication Across Cultures
- ENGL 678 Sociolinguistics
- ENGL 679 First and Second Language Acquisition
- ENGL 695 Topics in English (Linguistics)
Students have six hours of electives approved by the graduate program director.

Sociolinguistics Emphasis

The following six courses are required:

- ENGL 540 General Linguistics
- ENGL 550 American English
- ENGL 671 Phonology
- ENGL 672 Syntax
- ENGL 673 Discourse Analysis
- ENGL 678 Sociolinguistics

Three courses must be chosen from the following:

- ENGL 576 Problems of Language
- ENGL 544 History of the English Language
- ENGL 577 Language, Gender, and Power
- ENGL 673 Discourse Analysis
- ENGL 674 Internship in Applied Linguistics
- ENGL 676 Semantics
- ENGL 677 Language and Communication Across Cultures
- ENGL 679 First and Second Language Acquisition
- ENGL 695 Topics in English (Linguistics)

Students have six hours of electives approved by the graduate program director.

Thesis and Oral Examination for M.A. in Applied Linguistics

**Master of Arts Thesis Option.** Writing a thesis may benefit those who contemplate further graduate work as well as those who have a desire to pursue a single topic in depth. Under the guidance of a member of the graduate faculty, a student may earn six hours of credit for a completed, approved thesis. Students who write a thesis will defend the thesis early in their final semester and complete their oral exam in a separate examination.

**Master of Arts Oral Comprehensive Examination.** At the end of the program, all students must complete an oral comprehensive examination that covers each student's program of study and, where applicable, the thesis. Students who fail the oral comprehensive examination may take the test one more time in a different semester. Students who fail a second time will no longer be eligible to receive the Master of Arts degree in Applied Linguistics from Old Dominion University.

One week before the oral examination, students must submit a portfolio which will include all course syllabi, major assigned papers and a reflection about the entire M.A. experience.

Graduate Certificate in TESOL

This certificate, which partially satisfies the endorsement requirements for the State of Virginia, includes five courses (ENGL 670, 671, 672, 675, and 677). The certificate can be taken apart from the degree, but students must be admitted to the graduate program.

Accelerated Master of Arts—Applied Linguistics

By allowing exceptional students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for such students to earn both a B.A. in English with an emphasis in linguistics and an M.A. in applied linguistics within five years.

**Admission Requirements**

To be admitted to the program, students must have completed at least 60 undergraduate hours, including at least nine hours in English linguistics courses at the 300 level or above. At the time of admission, they must have an overall GPA of 3.00 or better, and a GPA of 3.30 or better in all English linguistics courses.

**Admission Procedures**

Interested students who meet the admission requirements should apply to the graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the graduate program director, students will:

1. Officially declare themselves an undergraduate English major with an emphasis in linguistics to the English Department's undergraduate chief departmental advisor.
2. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student’s undergraduate and graduate advising files.
3. Apply to the Office of Admissions for admission to the M.A. in applied linguistics program during their senior year.

Students will be admitted to the accelerated program for the semester after they make their application. Once students have been awarded their B.A. degrees and have fulfilled all regular admission requirements for the M.A. in applied linguistics, they will be officially admitted into the M.A. program.

**Program Requirements**

Students in the program will fulfill all normal admission and curricular requirements for both a B.A. in English with a linguistics emphasis and an M.A. in applied linguistics, with the following exceptions:

1. Students in the program may count up to 12 hours of graduate courses taken as an undergraduate for which they have earned a grade of B (3.0) or better toward both the B.A. in English and M.A. in applied linguistics degrees.
2. Students in the program may substitute English linguistics graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major.
   - A. Any 500-level linguistics course that is cross listed with a 400-level course may be substituted for the 400-level course.
   - B. Students may substitute 600-level courses for undergraduate courses according to the following list:
     - ENGL 672 Syntax for ENGL 350 Aspects of the English Language
     - ENGL 677 Language and Communication Across Cultures for ENGL 371W Communication across Cultures
     - ENGL 695 Topics in English for ENGL 495/496 Topics
   - C. Students in the program may make a written petition for other substitutions to the graduate program director (GPD) for electives in fields such as Asian studies, education, or professional writing. The GPD will consider substitutions in consultation with the departmental advisor and the instructor(s) of the courses involved.

**Master of Fine Arts—Creative Writing**

Michael Pearson, Graduate Program Director

The Master of Fine Arts in creative writing is widely regarded as a terminal degree. It is designed to prepare students for careers as publishing writers in fiction, poetry, prose nonfiction, or playwriting. A secondary goal is to emphasize not only preparation for college-level teaching (the practical vocational goal of most M.F.A. programs in creative writing) but also, as alternatives, preparation of graduates for careers as free-lance writers in prose (magazines, newspapers, and features) and in speech, play, or scriptwriting (television, film, video, radio); for careers as translators in international communications; and for work as editors and publishers.

**Admission**

Applicants must have completed a bachelor’s degree from an accredited institution with at least a 2.70 G.P.A., including a minimum of 24 credit hours in English with at least a B average. The Graduate Record Examination (GRE), General Test, is required of all applicants. Candidates must also submit writing samples in each genre for which they wish to be considered; final admission will depend on faculty evaluation of those writing samples. Students who have not completed 24 undergraduate credit hours in English may be admitted provisionally and make up the required undergraduate courses.

**Requirements**

The M.F.A. requires 54 credit hours, with no more than 12 hours at the 500-level. To graduate, a student must complete the 54 hours (39 hours of required courses and 15 hours of approved electives), maintain a 3.00 GPA overall, satisfy a mid-program review, and complete all work within six years. Course selections are as follows:
Required Courses: 39 hours

ENGL 650 (because the topic changes, course may be repeated four times with four different topics)
ENGL 660 or ENGL 661
ENGL 694
ENGL 698 (nine hours of thesis)
British Literature before 1800. Select one from the following: ENGL 503, 507, 510, 512, 516, 521, 612, 615, 621, 632
American Literature. Select one from the following: ENGL 547, 548, 656, 657, 658, 659
World Literature. Select one from the following: ENGL 567, 646, 655, 691 (when the topic is appropriate and with approval)

Approved Electives: 15 hours

Thesis and Examination for M.F.A. in Creative Writing

Master of Fine Arts Thesis. All candidates for the M.F.A. in creative writing must complete a book-length thesis project in their chosen genre (poetry, fiction, prose nonfiction, playwriting). Each student will select an advisor from the graduate faculty and work with that advisor and a committee of readers to prepare the manuscript. At the completion of the thesis, students will schedule an oral defense with the advisor and committee, at which point the thesis will be adjudged to its readiness for final acceptance, printing, and binding.

Foreign Language Competency. All students in the Master of Fine Arts in creative writing must demonstrate competency in at least one foreign language at a level equivalent to successful completion of a course at the 202 level.

Master of Science in Education–English

Refer to the Darden College of Education section of this catalog.

FOREIGN LANGUAGES AND LITERATURES

http://www.odu.edu/al/forlang

Frederick A. Lubich, Chair and Chief Departmental Advisor for German
Stephen Foster, Chief Departmental Advisor for French
Carolyn Dunlap, Chief Departmental Advisor for Spanish
Betty Rose Facer, Director, Language Learning Center

A student presenting three or more units of high school credit in a foreign language must take the College Entrance Examination Board (CEEB) achievement test before continuing in the same language. A student who does not place beyond the first-year level, but who wishes to continue in the same language, will be required to follow the course sequence 121F, 201, 202 in Spanish and 102F, 201, 202 in the other foreign languages if the score on the CEEB test is between 390 and 499. A student scoring below 390 on the CEEB achievement test in French, German or Spanish will be required to follow the course sequence 101F, 102F, 201, and 202. A student scoring 400 or above will be placed at the appropriate level above 101F. Contact the Testing Center for additional information.

The General Education Foreign Language requirement as well as the foreign language proficiency requirement for the B.A. degree in the College of Arts and Letters may be exempted through acceptable scores in the CEEB Achievement Test in French, German or Spanish or departmentally administered examinations in other languages. Credit is granted for scores of 3, 4 and 5 on Advanced Placement (AP) language exams in French, German, Latin and Spanish and literature exams in French and Spanish. No more than nine credits will be awarded if both AP language and literature exams are submitted. Credit is also granted for scores of 4, 5, 6 and 7 on the AP French, German, Latin and Spanish of the International Baccalaureate (IB). Contact the Testing Center for additional information.

Special emphasis at all levels of language instruction is placed on oral proficiency through dialogues, oral reports, class discussions and assignments in the foreign language laboratory.

Language Learning Center. The goal of the Language Learning Center is to serve the needs of faculty, students and the Hampton Roads community in promoting the study of foreign languages offered at Old Dominion University through the use of technology-enhanced methods and materials. The center has been an integral part of the Foreign Languages and Literatures Department since its inception in 1992. Serving over 1,200 students each semester from the Department of Foreign Languages and Literatures and the English Language Center, the center is committed to instructional technology for foreign language learning and quality instruction.

Bachelor of Arts–Foreign Languages and Literatures Major

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (Satisfied in the major by FR 311, GER 311, or SPAN 311)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Satisfied by the major)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills (Satisfied by ECI 304 for teacher licensure students)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History (requires HIST 102H and HIST 101H, 103H, 104H or 105H)</td>
<td>6</td>
</tr>
<tr>
<td>Literature (requires FLET 100L)</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.</td>
<td></td>
</tr>
<tr>
<td>Social Science (requires GEOG 100S and POLS 100S or COMM 200S for teaching licensure students; GEOG 100S and one course selected from a different discipline for non-teaching students)</td>
<td>6</td>
</tr>
</tbody>
</table>

Core Requirements

Option A: Another Foreign Language at any level, or
Option B: Area Studies. Consult the department for a list of approved courses each semester.

Six hours of Natural Science with labs in sequence.

EMPHASIS AREAS

FRENCH

FR 311 or 320 Speaking and Listening/Contemporary France 3
FR 312W Writing and Reading 3
FR 331, 332 or 333 French Lit Forms-Prose, Theatre, or Poetry 3
FR 407 Advanced Grammar & Syntax 3
FR 400-level electives 6
FR 300- or 400-level elective 12

GERMAN

GER 311 Speaking and Listening 3
GER 312W Writing and Reading 3
GER 321 German Civilization from Enlighten to WWI 3
GER 407 Stylistics and Phonetics 3
GER 300- or 400-level electives 18

SPANISH

SPAN 311 Speaking and Listening 3
SPAN 312W Reading and Writing 3
SPAN 320 Spanish Civilization OR
SPAN 321 Spanish American Civilization 3
SPAN 331 Intro to Spanish Lit: Medieval to 1700 or SPAN 332 Intro to Spanish Lit: 1700 to Present or SPAN 333 Survey of Early Latin American Lit or SPAN 334 Survey of Modern Latin American Lit 3
SPAN 407 Advanced Grammar and Syntax 3
SPAN 400-level electives 6
SPAN 300- or 400-level electives 9
Bachelor of Arts with Licensure in Pre-K Through Grade 12

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in French, German, or Spanish and overall, with no grade less than a C in the content area and C- in the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I or exam prior to, or during, enrollment in ECI 301. The Department of Foreign Languages and Literatures strongly encourages all students preparing for teaching to participate in a structured learning experience in a country where the language is spoken. The department’s study abroad programs include Tours (France), Stuttgart (Germany), and Guadalajara (Mexico). Advisors work closely with the Office of International Programs and the Career Management Center to find additional study abroad opportunities or internships. The major advisor will make every effort to assist with appropriate placement and will discuss how elective credit can be earned. Majors and minors may apply for travel assistance awards granted by the Department of Foreign Languages and Literatures. Electives may also be used toward certification in a second teaching field.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- in the professional education core for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate Praxis II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II French, German or Spanish Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C in the content area and C- in the professional education core; and completion of a minimum of 120 credit hours.

Students holding a baccalaureate degree in French, German, or Spanish (or its accepted equivalent) may enroll in the program leading to licensure. Students seeking licensure only must see an advisor before enrolling. A maximum of nine hours in the language, to be selected with the help of the major advisor, may also be required.

Students seeking licensure in pre-K through grade 12 complete the lower-division General Education requirements listed under the Bachelor of Arts-Foreign Languages and Literatures major.

Concentration in French with Licensure in Pre-K Through Grade 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR 311</td>
<td>Speaking and Listening</td>
<td>3</td>
</tr>
<tr>
<td>FR 312W</td>
<td>Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>FR 320 or 420</td>
<td>Contemporary France/Francophone Civ</td>
<td>3</td>
</tr>
<tr>
<td>FR 407</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>FR 300/400-level electives</td>
<td>at least three credits must be in literature at the 400 level</td>
<td>18</td>
</tr>
</tbody>
</table>

Professional Education sequence:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301</td>
<td>Social Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>ECI 304</td>
<td>Educational Applications of Computers (satisfies computer skills requirement)</td>
<td>3</td>
</tr>
<tr>
<td>ECI 360</td>
<td>Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>ECI 408</td>
<td>Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>ECI 485</td>
<td>Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>ESSE 406</td>
<td>Special Needs Children-General Ed</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 413</td>
<td>Fundamentals-Human Growth and Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in German with Licensure in Pre-K Through Grade 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 311</td>
<td>Speaking and Listening</td>
<td>3</td>
</tr>
<tr>
<td>GER 312W</td>
<td>Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>GER 321</td>
<td>German Civilization from Enlightenment to WWI</td>
<td>3</td>
</tr>
<tr>
<td>GER 407</td>
<td>Stylistics and Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>GER 300/400-level electives</td>
<td>at least six credits must be on the 400 level and one in literature</td>
<td>18</td>
</tr>
</tbody>
</table>

Professional Education sequence: ECI 301, 304, 360, 408, 485, ESSE 406, 413, FL 452, 456

Concentration in Spanish with Licensure in Pre-K Through Grade 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 311</td>
<td>Speaking and Listening</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 312W</td>
<td>Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 320</td>
<td>Spanish Civilization OR</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 321</td>
<td>Spanish American Civilization</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 331</td>
<td>Intro to Spanish Lit: Medieval to 1700 or</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 332</td>
<td>Intro to Spanish Lit: 1700 to Present or</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 334</td>
<td>Survey of Early Latin American Lit or</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 407</td>
<td>Advanced Grammar and Syntax</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 410 or 415</td>
<td>Intro to Spanish Linguistics/ Spanish Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 400-level electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Professional Education sequence: ECI 301, 304, 360, 408, 485, ESSE 406, 413, FL 452, 456

UPPER DIVISION GENERAL EDUCATION

Satisfied by the professional education core.

Foreign Languages and Literatures Minors

The department offers minors in foreign languages and literatures with a concentration in French, German and Spanish. Students must complete 15 hours of 300/400-level courses in the language and earn a cumulative grade point average of 2.0 in these upper-division courses. Only one FR/GER/SPAN course taught in English may be applied toward the minor. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Contact the department for a list of recommended courses.

For information on minors in European Studies, Japanese Studies, and Latin American Studies, see the beginning of the College of Arts and Letters section of this Catalog.

HISTORY

John Kuehl, Chair

Bachelor of Arts–History Major

James R. Sweeney, Chief Departmental Advisor

The Department of History offers a Bachelor of Arts degree that prepares students broadly for modern careers in business, government, and teaching, or for graduate study in history, law, library science, business, or education. The major requires 36 hours of course work. At least 12
hours of History at the 300 and 400 levels must be taken in residence at Old Dominion University.

The Department’s academic offerings reflect the diversity of the faculty, and students are encouraged to sample the course offerings broadly. The requirements are as follows:

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Proficiency through 202 level)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required. (Technology requirement may be satisfied in the major by HIST 304T or 389T)

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 100-level elective (chosen from HIST 101H, 102H, 103H, 104H, 105H and different from those selected for general education)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 201 Introduction to Historical Methods</td>
<td>3</td>
</tr>
<tr>
<td>HIST 402W Seminar in History and Theory</td>
<td>3</td>
</tr>
<tr>
<td>HIST 400-level history electives (2) in addition to 402W</td>
<td>6</td>
</tr>
<tr>
<td>HIST 300-400 Elective (American)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300-400 Elective (European)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300-400 Elective (African or Asian or Latin American or Middle Eastern or Russian)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300-400 Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A. Approved Minor, 12-24 hours; also second degree or second major.</td>
<td></td>
</tr>
<tr>
<td>Option B. Cluster, 9 hours (3 hours may be in the major area of study.)</td>
<td></td>
</tr>
</tbody>
</table>

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major. 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Bachelor of Arts–History Major with a License in History/Social Sciences**

The Colleges of Arts and Letters and of Education cooperate in providing a Bachelor of Arts degree that licenses its recipient to teach on the secondary level in the Commonwealth of Virginia. Most other states honor this license. Students must achieve passing scores on the PRAXIS I exam or State Board of Education-approved SAT scores as a prerequisite for entry into the professional education core. They must also pass the PRAXIS II exam in order to be licensed. For information on these standardized tests, students should consult with their education advisor.

To gain admission to this program, students must have an overall grade point average of 2.75 and maintain this average to graduate.

Entering students must declare their intention to take their degree in History and Social Sciences in the History Department, whereupon they will be assigned an advisor. Another advisor will be assigned in the College of Education. It is the responsibility of the student to see both advisors regularly.

**Admission.** Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to enrollment in ECI 301.

**Continuation.** Students must maintain a general grade point average of 2.75 in the academic major and overall and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuation in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or in the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II Social Studies Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

**Graduation.** Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the content courses required for licensure, with no grade less than a C- in the major, content courses required for licensure, and professional education core; and completion of a minimum of 126 credit hours. The requirements are as follows:

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Proficiency through 202 level)</td>
<td>6-12</td>
</tr>
<tr>
<td>Computer Skills (Satisfied by ECI 304)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History (HIST 102H and 104H required to satisfy general education)</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>6</td>
</tr>
<tr>
<td>Philosophy (PHIL 120P recommended)</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology (GEOL 110N-112N or 111N-112N recommended, Students who take other science courses will be expected to take GEOG 101S in addition. Technology requirement may be satisfied in the major by HIST 304T, 389T, or POLS 390T)</td>
<td>11-12</td>
</tr>
<tr>
<td>Social Science (One or two courses in Economics, ECON 200S if one course is elected; ECON 201S and 202S if two courses are selected. ECON 200S may not be taken if two Economics courses are offered to fulfill the social science requirement. SOC 201S or ANTR 110S must be taken if one economics course is selected.)</td>
<td>6</td>
</tr>
</tbody>
</table>

**MAJOR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 101H, 103H, or 105H</td>
<td>3</td>
</tr>
<tr>
<td>HIST 102H Europe in a World Setting (satisfies general education)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 104H U.S. in a World Setting (satisfies general education)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 201 Introduction to Historical Methods</td>
<td>3</td>
</tr>
<tr>
<td>HIST 402W Seminar in History and Theory</td>
<td>3</td>
</tr>
<tr>
<td>HIST 400-level history electives (2) in addition to 402W</td>
<td>6</td>
</tr>
<tr>
<td>HIST 300-400 Elective (American)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300-400 Elective (European)</td>
<td>3</td>
</tr>
<tr>
<td>HIST 300-400 Elective (African or Asian or Latin American or Middle Eastern or Russian)</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must pass PRAXIS I or achieve approved SAT scores for admission into teacher education. Passage of PRAXIS I is a prerequisite for entry to any education practicum course. Students should take the PRAXIS I exam prior to enrollment in ECI 301.

**Professional Education Core:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301 Social Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>ECI 304 Educational Applications of Computers (satisfies computer skills requirement)</td>
<td>3</td>
</tr>
<tr>
<td>ECI 360 Classroom Management and Discipline</td>
<td>2</td>
</tr>
<tr>
<td>ECI 408 Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>ECI 455 Developing Instructional Strategies: Social Studies</td>
<td>4</td>
</tr>
<tr>
<td>ECI 485 Student Teaching</td>
<td>12</td>
</tr>
</tbody>
</table>
Admission Requirements

To be admitted to the program, students must be a declared major in history, have completed a minimum of 60 undergraduate credit hours, including at least nine hours in history courses at the 300-level or above, and have a GPA of 3.30 or better overall and in history.

Admission Procedures

Students who meet the admission requirements should consult with the graduate program director no later than the spring or summer prior to their senior year to plan graduate courses to be taken as an undergraduate. During their senior year, students must file an application to the M.A. program in history with the Office of Admissions. This application includes an Old Dominion University graduate application, a 500-word personal statement, two letters of recommendation, and Graduate Record Examination scores. Graduate admission deadlines apply.

Once students have been awarded their B.A. degree and fulfilled all regular admission requirements for the M.A. in history, they will be officially admitted into the M.A. program.

Requirements for the Accelerated B.A./M.A. Program

Students in the program will fulfill all regular admission and curricular requirements for both the B.A. and M.A. in history, with the following exceptions:

1. Upon completing 90 hours of undergraduate work and attaining senior status, admitted students may take up to 12 hours of graduate courses as an undergraduate, provided that those courses fulfill curricular requirements for both the B.A. and M.A. degrees in history.

2. Students will need to complete the following major requirements for the B.A.:
   - Nine credits of survey course work from HIST 101H, 102H, 103H, 104H, or 105H
   - Six credits HIST 400-level history electives (2) in addition to 402W
   - Three credits HIST 300-400 Elective (American)
   - Three credits HIST 300-400 Elective (European)
   - Three credits HIST 300-400 Elective (African or Asian or Latin American or Middle Eastern or Russian)
   - Six credits HIST 300-400 Elective

3. Up to 12 credits of graduate-level course work taken as an undergraduate during the senior year can substitute for 300- and 400-level requirements above and will be counted toward the B.A. degree in history.

4. The following guidelines apply:
   - a. Any 500-level course that is cross listed with a 400-level course may be substituted for the 400-level course; however, the student cannot take a 500-level course which has already been taken at the 400 level. Only nine credits of 500-level course work will count toward the M.A. degree.
   - b. The following courses can be taken to fulfill the 300-400 level American elective requirement: HIST 602, 604, 608, 612, 616, 618.
   - c. The following courses can be taken to fulfill the 300-400 level European elective requirement: HIST 633, 650, 652, 654, 656, 658, 660 (European topics).
   - d. The following courses can be taken to fulfill the 300-400 level elective requirement in African, Asian, Latin American, Middle Eastern, or Russian history: HIST 640, 645, 658 and 660 (Russian or Soviet History).

5. All graduate courses taken as an undergraduate that are completed with a grade of B (3.0) or better will also count toward the 30-credit M.A. degree in history. See the following section on Master of Arts–History which details the requirements for that program.

Master of Arts–History

Jane Merritt, Graduate Program Director

The Department of History offers courses of study leading to the Master of Arts with a major in history.

Admissions

Applicants must meet all University requirements and regulations for admission. Their applications must include a short essay of 500 words or less, addressing their academic interests and goals, and two letters of recommendation. The Graduate Record Examination (GRE), General Test, is required for all applicants.

An undergraduate major or minor in history is desirable but is not required for admission. Generally, 18 semester credit hours in history and closely related cognates are sufficient for admission on a provisional basis. These credit hours should include survey and upper level courses.

The graduate program director may prescribe certain undergraduate courses to be completed before recommending admission to the program. Under certain circumstances, students can be admitted to graduate courses while simultaneously completing an undergraduate prerequisite.

The requirement for admission to full standing (regular status) is 24 semester credit hours with an average of at least 3.00 in history and a general GPA of 3.00. Provisional admission requires 18 credits (as described above) with an average of 3.00 in history and a GPA of 2.70.

Students with averages below these minimums can attempt to improve their standing in undergraduate courses approved by the graduate program director. However, they cannot be admitted to graduate courses until they have achieved acceptable averages in history. Applicants who are denied admission to the MA program in history are not permitted to enroll in history graduate courses as non-degree students.
Prospective applicants with questions about their admission status should contact the graduate program director in the Department of History. Those certain of their qualifications should apply through the Office of Admissions.

Admissions forms should reach Old Dominion University well in advance of the intended term of entry, but no later than November 1 for spring admission, March 1 for summer, and June 1 for fall. All required forms and documents should be sent directly to the Admissions Office, which creates a central file for each applicant. Only the one-page application for graduate financial assistance along with a duplicate copy of the 500-word essay should be sent directly to the Graduate Program Director.

Graduate Financial Aid

Old Dominion University offers financial assistance to qualified graduate students. Types of aid include research and teaching assistantships, fellowships, grants, scholarships, and part-time employment. Nearly all forms of aid require that the student be engaged in full-time graduate study. Fellowships, assistantships, tuition grants, and small research grants may be available. Departmental funds may affect fellowship and assistantship amounts, establishment of need and academic promise affect some grant amounts. Minority student grants and fellowships are also available. The application deadline is February 15. Graduate teaching and research assistants are charged tuition at the in-state rate. International students must pass the SPEAK test (or an equivalent) of spoken English to become eligible for teaching assistantships.

Requirements for the M.A. Program

Two courses of study are available. One is a 30-credit program comprising 24 hours of course work, an oral examination, and a thesis for which students earn six credits (HIST 698-699) on a pass/fail basis. The other is a 30-credit program, capped by written comprehensive examinations in two general fields and an oral examination. Either alternative leads to an M.A. in history.

All candidates for the M.A. in history must meet the general graduate degree requirements established for the University. In addition, all students must complete HIST 600 during their first year in the program. Students pursuing the examination option must complete HIST 675 during their last year in the program. Students are permitted a maximum of six credits in other departments offering graduate courses if the work is germane to their historical studies; prior approval of the Graduate Program Director is required. Students who have received two grades of C+ or below, or whose grade point average falls below 3.00, will be indefinitely suspended from the program.

Thesis Option

Students preparing to write theses must complete at least nine hours in studies that form a field of concentration and at least six hours in an unrelated field. HIST 600, 675, 698, and 699 do not satisfy either of these distribution requirements. No more than nine of the required 30 hours must be earned in 500-level courses. A two-hour oral review in the general area of the thesis is required before the completion of 18 hours of course work. The Master's thesis is written with the guidance and under the direction of a thesis advisor selected by the candidate in consultation with the graduate program director. The thesis is reviewed and the candidate examined by a faculty committee chaired by the thesis advisor. The thesis defense—normally a two-hour oral examination—focuses on the thesis, the historical context, and related aspects of the student's concentration. Final approval of the thesis is the responsibility of the thesis advisor, the graduate program director, and ultimately of the dean of the College of Arts and Letters, who certifies the candidate for graduation.

Examination Option

In addition to HIST 600 and 675, students electing the examination option must complete a minimum of six credit hours in each of two fields of concentration for which they will be tested. At least six of the remaining 12 credit hours should be taken in areas related to the exam fields. No more than nine of the required 30 credit hours may be earned in the 500-level courses. The standard fields of concentration for the Examination Option are: (1) social and economic history; (2) political, cultural, intellectual history; (3) international history; and (4) military history. Fields of concentration can be tailored to the following geographic areas: United States, Europe, Latin America, Asia, and Africa. An emphasis on gender can also be pursued.

Written comprehensive field examinations may be taken in conjunction with HIST675. The two field exams are taken over the course of two days with a two-hour oral examination following the completion of written exams. Exams are individualized by the student's examining committee but competence in the entire field is essential. Examinations are completed no later than 30 days before the end of a semester, and thus are normally scheduled in early April, July, and November. A field exam is judged in its entirety and is rated Pass or Fail by the examining committee; the same is true of the oral examination. Students who fail an exam can be re-examined in the next scheduled round of exams. Only one re-examination is permitted.

Graduate Certificate in the History of Strategy and Policy

Concurrent with degree work, history graduate students can earn a twelve-credit Certificate in the History of Strategy and Policy. The certificate is awarded upon completion of six credit hours of required courses, and an additional six credits of courses that explore political-military issues selected from designated courses in history and other designated disciplines. The twelve certificate credits apply toward the M.A. in History. The certificate is only awarded to students who have been admitted to graduate study in history or other applicable programs. Inquiries about the certificate should be addressed to the Strategy and Policy Coordinator, Department of History, Old Dominion University, Norfolk, VA 23529-0091.

HUMANITIES

Dana A. Heller, Director, Institute of Humanities; 757 683-3821
http://web.odu.edu/als/artsandletters/humanities/index.html

Master of Arts–Humanities

The Institute of Humanities administers the Master of Arts program in the humanities offered by the College of Arts and Letters. The program, which emphasizes interdisciplinary studies, cultural studies, and critical studies, allows students to pursue individualized programs of study that incorporate work from more than one humanities discipline. Students may enroll in approved graduate courses from the following fields: art history, Asian studies, linguistics, literature, foreign languages, history, music, philosophy, political science and geography, sociology and anthropology, communication and film studies, women's/gender studies, international studies, etc.

Admission

The program is open to all qualified holders of the B.A. or B.S. degree and is designed for full-time students as well as part-time students. Students who have recently completed their bachelor's degree as well as nontraditional students who are returning to an academic environment after an absence of some years, and students who are planning to pursue the Ph.D. as well as students who wish to broaden and strengthen their understanding of the humanities through advanced work at the master's level.

In addition to meeting general University requirements, an applicant must have an undergraduate average of 3.00 in the liberal arts and 2.80 overall, as well as 24 hours in liberal arts disciplines. All students seeking admission to the humanities program are required to submit recent GRE scores. Although admission is selective, the University recognizes that each individual possesses unique qualifications that will be taken into consideration. An essay of 500 words must be submitted with the application material. The essay should 1) propose a general program of study; 2) discuss personal, intellectual, and professional goals; and 3) explain the relationship of those goals to the intended program of study. All application inquiries should be made to the Office of Admissions.

Requirements

Students may pursue the 36-hour non-thesis option or the 33-hour thesis option. All students must take HUM 601 and 602. These courses provide an introduction to humanities research, methodology, and critical approaches, and serve as the foundation for each student's individualized program. In selecting their courses, students may take only 12 hours at the 500 level. All students must complete their graduate work within a six-year period.
Non-thesis Option. Students selecting the non-thesis option must take the capstone seminar, HUM 694. This seminar brings students together in their final semester of study in order to explore the current state of humanities disciplines and theories of interdisciplinary. All students are required to complete a final integrating paper that demonstrates effective interdisciplinary work. Students wishing to undertake special projects other than the research paper must obtain the approval of the program director and appropriate faculty advisors.

Thesis Option. Students pursuing the 33-hour thesis option must take HUM 698-699 (thesis, six hours) in place of HUM 694. The thesis is to be based on original scholarly research and must reflect the interdisciplinary nature of the humanities degree. In rare cases, students may be permitted to undertake a creative project—the making of a film or video, the production of a musical or multimedia event—with the approval of the director. Each thesis student will be assigned a faculty advisor who will chair a thesis committee appointed by the director of the Institute of Humanities. The committee, consisting of faculty certified for graduate instruction in the College of Arts and Letters, will direct and evaluate the student's work. The thesis committee must have faculty members from at least two different Arts and Letters disciplines. Upon completion of the thesis, the committee will conduct a two-hour examination and defense of the thesis and the topics related to the student's program of study. A formal written statement explaining and justifying the project must be submitted before the oral examination.

Sample Study Program Options

The Master of Arts degree in humanities is an interdisciplinary graduate program. Choosing from more than 70 graduate-level courses offered through various departments of the College of Arts and Letters each semester, students may select their own emphasis and design a program in order to meet their own intellectual and professional objectives, or they may select a pre-approved concentration with a more structured program of study. Among the many emphases which may be developed are the following: Medieval Studies; Ideologies: Cromwell to Marx; African American Studies; Global Perspectives; American Studies; Ethics, Politics, and Cultural Values; Women's Studies/Gender Studies; Postcolonial Studies; Revolution and Modernity; Contemporary Art Criticism; Drama/Performance Studies; History and Theory of Film and; Religion and Public Policy.

Culture, Technology, and Social Change Concentration

This concentration was created to enhance humanities students' professional credentials and to enrich their academic experience by providing a structured program of graduate study that reflects a growing field of interdisciplinary scholarship. This concentration will foster critical thinking about the impact of technology on culture, society, and values. Moreover, it will prepare students for a job market that places increasing value on the ability to comprehend connections between technical and humanistic forms of knowledge.

Women's Studies Certificate

A Women's Studies Certificate is available to graduate students through the Institute of Humanities (in association with the women's studies program) upon completion of the following 15-hour program of course work:

1. WMST 560, 570
2. At least nine additional credits in 500- or 600-level courses approved for the women's studies curriculum and drawn from various disciplines (such as English, history, political science and geography, foreign languages, art history, women's studies, etc.) No more than six of these credits may be taken in any one field.
3. At least one of the courses chosen must be on the 600 level.

Only students who hold a B.A. or B.S. degree with an overall GPA of 2.75 may apply for the graduate women's studies certificate. Students must maintain a 3.00 grade point average in the 15 graduate credits needed for the certificate. The women's studies certificate may be undertaken independently or in combination with a graduate degree in humanities (or in combination with another graduate degree). Students wishing to pursue the certificate through the Institute of Humanities must gain admission to the humanities graduate program before the completion of nine graduate hours and must satisfy all of the admission requirements for the program including the GRE.

The director of the women's studies program or a designee will serve as advisor for students who gain admission to the humanities program only for the purpose of pursuing the graduate women's studies certificate. Students pursuing the certificate in combination with a graduate degree in the humanities will have their progress monitored by both a women's studies advisor and the director of the Institute of Humanities.

Accelerated Master of Arts in Humanities—Communication, Individualized Interdisciplinary Studies, or Women's Studies

By allowing exceptional majors in communication, individualized interdisciplinary studies, or women's studies to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for students with a demonstrated record of academic excellence to earn both a B.A. or B.S. in their discipline (communication, individualized interdisciplinary studies, or women's studies) and an M.A. in humanities in five years.

Admission Requirements

To be admitted to the program, students must declare a major in communication, individualized interdisciplinary studies, or women's studies B.A. or B.S. and complete a minimum of at least 60 undergraduate credit hours, including at least six hours of 300/400 level courses in the major. At the time of admission to the accelerated program, students must have an overall undergraduate GPA of 3.00 or better.

Admission Procedure

Interested students who meet the admission requirements should apply to the humanities graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the chair or director of their department and the humanities graduate program director, students will:

1. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student's undergraduate and graduate advising files.
2. Submit an Old Dominion University graduate application, a 500-word personal statement, a sample critical/analytical essay or research paper, two letters of recommendation, and GRE scores to the Office of Admissions during their senior year.

Students will be officially admitted into the M.A. in humanities program once they have been awarded their bachelor's degree and have fulfilled all regular admission requirements for the M.A. in humanities. (Please refer to the appropriate section of this catalog for information on the requirements for the bachelor's degree in communication, individualized interdisciplinary studies, or women's studies.)

Bridge Courses

Students admitted to the accelerated program may count up to 12 hours of bridge courses (graduate courses taken as an undergraduate) for which they have earned a grade of B (3.0) or better toward both the specific B.A. or B.S. and the M.A. in humanities. These courses may be 500 or 600 level courses within or cross-listed with the discipline, or approved graduate courses. Any 500-level course that is cross listed with a 400-level course may be substituted for the 400 level-course. However, all students must complete an undergraduate writing intensive course in the major. Students who complete less than 12 bridge course credits may fulfill humanities program requirements by taking courses during summer sessions and/or an additional semester; however, all students are required to fulfill a minimum of six bridge course credits in order to be eligible to continue in the accelerated program.

The M.A. in Humanities

Students in the accelerated program will fulfill all normal admission and curricular requirements for both a B.A. or B.S. in their discipline and an M.A. in humanities, with the following exceptions, conditions, and requirements.

1. In the initial weeks of the first semester of study in the humanities M.A. program, students in the accelerated program in communication or individualized interdisciplinary studies, in consultation with the humanities graduate program director and/or faculty, will designate a graduate concentration area and assemble an interdisciplinary curriculum based on the area of concentration. This will take the form of a written proposal to be approved by the Humanities Advisory Committee.
Students will be advised in their selection of appropriate courses by both the humanities graduate program director and faculty.

2) In addition, all students, regardless of their concentration, are required to take:
   HUM 601: The Subject of the Humanities: Introduction to Research, Methodology, and Theory
   HUM602: The Humanities on Trial: Postmodernity, Technology, Globalization
   HUM 694: Interdisciplinarity and the Humanities
   HUM694, the capstone seminar for accelerated humanities M.A. students, will be taken in the final semester of study before the completion of the M.A. degree. Students will be required to complete a substantive research project which is scholarly in nature, reflecting the student's training in the discipline and the humanities.

3) No more than 12 hours of graduate credit at the 500-level may be applied to the M.A. in humanities.

4) Students will not be permitted to take any 500-level course that they have already taken at the undergraduate 400 level.

5) Communication students must take at least two 600-level graduate courses offered by the Department of Communication and Theatre Arts. Courses taken through departments other than Humanities and Communication and Theatre Arts must correspond to the student's declared concentration area. No more than six credit hours may be concentrated in any one department other than Humanities or Communication and Theatre Arts.

6) Women's studies students will be required to take graduate-level courses that focus on women and/or gender in relation to various aspects of culture and the humanities. Students may elect graduate courses in women's studies, as well as courses that are cross-listed with women's studies, from any designated humanities or social science department, such as history, linguistics, literature, sociology, psychology, international studies, etc., courses approved by the director of women's studies. However, no more than six credit hours may be concentrated in any one discipline other than humanities and women's studies.

7) There is no thesis option for students in the accelerated M.A. in humanities program. Students who wish to write a thesis may elect at any time to change over to the standard 33 credit, thesis-track, humanities program.

8) Upon completion of 30 graduate credits, students will be awarded the M.A. in humanities. Communication or women's studies students will be awarded the M.A. in humanities with a concentration in communication or women's studies.

INTERDISCIPLINARY STUDIES

Renee E. Olander, Director of Interdisciplinary Studies
Tammera Nielsen, Advisor for Interdisciplinary Studies
Lucien X. Lombardo, Coordinator of Integrative Individualized Studies, Advisor for Zoological Parks Management, and Advisor for Work and Professional Studies
Matthew Oliver, Advisor for Professional Writing

The Department of Interdisciplinary Studies coordinates the administration and delivery of four degree programs: the Bachelor of Science in interdisciplinary studies-teacher preparation concentration; the Bachelor of Arts and Bachelor of Science degrees in interdisciplinary studies-individualized programs; and the Bachelor of Science in interdisciplinary studies-professional writing, work and professional studies or zoological parks management.

Bachelor of Science Degree — Interdisciplinary Studies Major — Teacher Preparation Concentration

This interdisciplinary degree draws courses from four colleges within the University to prepare students interested in teaching elementary school content. All students must complete content competency requirements for teacher licensure in the Commonwealth of Virginia. In cooperation with the Darden College of Education, students earn full licensure to teach elementary school with the completion of both the B.S. degree in interdisciplinary studies and the Master of Science in Education.

Course work in the baccalaureate degree spans the disciplines of English literature, composition, and linguistics; mathematics and statistics; natural sciences including biology, chemistry, physics, and geology; social sciences including economics, geography, history, political science, and psychology and/or human growth and development; and educational foundations, technology, and methods. The broad curriculum, along with admittance and continuance requirements described below, prepares teacher candidates to meet state licensure standards, including passing scores on the PRAXIS II specialty exams for the Commonwealth of Virginia, and to meet graduate admission requirements to the Darden College of Education.

Teacher candidates may choose from the following undergraduate emphasis tracks for entry into the graduate program of their choice, in which licensure is completed:

- Early Childhood (PK-3) and Special Education;
- Elementary (PK-6) Education.

Each emphasis track is described below, and additional information is posted on the departmental website: http://web.odu.edu/al/ids or available in hardcopy from the department.

Admission. To declare the major, students must have a 2.80 cumulative grade point average (GPA) and grades of C or above in English 110C and English 111C. Students who are ineligible to declare the major will be advised as prospective majors.

Continuance. Teacher candidates must maintain a grade point average of 2.80 in all upper-level course work and earn a grade no less than C in any course in the major content area, including professional education courses. Teacher candidates whose cumulative GPAs fall below 2.80 for two consecutive semesters will be considered probationary. Probationary teacher candidates must complete an advising agreement and retake courses (grade forgiveness may apply) to continue in the program. Teacher candidates whose cumulative GPAs fall below 2.80 for more than two semesters will be undeclared, advised as prospective majors and encouraged to consider other academic and professional goals. In addition, PRAXIS I or SAT and admittance to Teacher Education Services in the Darden College of Education are prerequisites for the undergraduate practicum courses (ESSE 369 and ECI 436); therefore, passing PRAXIS I scores or State Board of Education-approved SAT scores and admittance to Teacher Education Services are also continuance requirements. All teacher candidates in the major must consult with an academic advisor every semester to review their progress. All declared interdisciplinary studies-teacher preparation majors are required to submit passing PRAXIS I scores or State Board of Education-approved SAT scores and admittance to Teacher Education Services are also continuance requirements. All teacher candidates in the major must consult with an academic advisor every semester to review their progress. All declared interdisciplinary studies-teacher preparation majors are required to submit passing PRAXIS I scores or State Board of Education-approved SAT scores and admittance to Teacher Education Services are also continuance requirements. All teacher candidates in the major must consult with an academic advisor every semester to review their progress. All declared interdisciplinary studies-teacher preparation majors are required to submit passing PRAXIS I scores or State Board of Education-approved SAT scores and admittance to Teacher Education Services are also continuance requirements. All teacher candidates in the major must consult with an academic advisor every semester to review their progress. All declared interdisciplinary studies-teacher preparation majors are required to submit passing PRAXIS I scores or State Board of Education-approved SAT scores and admittance to Teacher Education Services are also continuance requirements.

Graduation. Students must complete all program requirements and earn a grade of no less than C in every major and professional education course, and a cumulative grade point average of 2.80, to graduate. In addition, students must pass the Exit Examination of Writing Proficiency and complete the Senior Assessment Exam and the Departmental Senior Exit Survey.

Admission to the graduate programs in education requires a cumulative grade point average of 2.80 and completion of the graduate school application, which includes the GRE or MAT. Teacher candidates with a cumulative GPA of 3.2 and passing scores on all three sections of PRAXIS I will be eligible for Fast-Track admission to the graduate programs in education without taking the GRE or MAT. Candidates earn full licensure to teach in the chosen emphasis area upon completion of the master's degree in the Darden College of Education; in addition, all teacher candidates must obtain passing scores on the appropriate PRAXIS II specialty area tests. Test results will be submitted to the director of the Office of Teacher Education Services, who will forward all licensure credentials to the Virginia Department of Education (VDOE). Please see the College of Education section of this Catalog or the website for more information. Program requirements are listed below.
Early Childhood (PK-3) and Special Education Emphasis*

<table>
<thead>
<tr>
<th>General Education Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;English 110C&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;English, History, or Philosophy 111C&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;English 112L, 144L, or FLET 100L&quot;</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>&quot;Communication 101R, 103R, or 112R&quot;</td>
<td>3</td>
</tr>
<tr>
<td>Computer Skills-met by ECI 304 (see prerequisites)</td>
<td>3</td>
</tr>
<tr>
<td>&quot;History 104H (United States)&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;History 102H, 105H, 101H, or 103H&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Economics 200S, 201S, or 202S&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Geography 100S or 101S&quot;</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy Requirement (150P recommended)</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Math 102M or 162M&quot;</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Biology 108N-109N or 115N-116N&quot;</td>
<td>8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>41-50</strong></td>
</tr>
</tbody>
</table>

Major Content Requirements

| English 327W                | 3       |
| English 350, 370, 477 or 444 | 3 |
| History 356                | 3       |
| World History - third general education course (102H, 101H, 105H, or 103H) | 3 |
| Psychology 201S, ANTR 110S or SOC 201S | 3 |
| Political Science 101S or 102 | 3 |
| Political Science 331 or 311 | 3 |
| Geography 250, 310, 350, 412, 455, 458, or POLS 414 | 3 |
| Math 335                   | 3       |
| Math 302                   | 3       |
| Statistics 130M or 306      | 3       |
| Geology 210 or OCEN 402    | 3-4     |
| Physics 101N or 111N or CHEM 101N or 115N | 4 |
| PE 327 or HE 230 and 2 PE activity credits | 5 |
| Music 308 or Arts 305      | 3       |
| One 300/400-level content area elective - See website or department for list | 3 |
| **TOTAL**                  | **51-52**|

Professional Education and Special Education Minor (meets upper-division general education)

| ECI 301 Foundations, Observation, & Participation | 3 |
| ECI 304 Educational Applications of Technology (meets computer skills requirement) | 3 |
| ESSE 369 Practicum | 2 |
| ESSE 468 Language Acquisition | 3 |
| ESSE 400 Foundations of Special Education | 3 |
| ESSE 411 Behavior Management | 3 |
| ESSE 413 Fundamentals-Human Growth & Development | 3 |
| ESSE 415 Instruction & Service/Mild Disabilities | 3 |
| **TOTAL** | **23** |

**TOTAL DEGREE CREDITS:** 114-120 credit hours***

Elementary Education (PK-6) (also offered through TELETECHNET Distance Learning)

* This undergraduate program prepares students to matriculate into the graduate program in early childhood education and the graduate program in special education; students should consult an advisor about choosing one or both tracks.
** Departmental requirements are not necessarily met by the associate degree; a minimum grade of C is required in each.
*** NOTE: ALL STUDENTS MUST EARN A MINIMUM OF 120 CREDIT HOURS FOR THE BACCALAUREATE DEGREE.

General Education Courses

| **English 110C** | 3 |
| **English, History, or Philosophy 111C** | 3 |
| English 112L, 144L, or FLET 100L | 3 |
| Foreign Language | 0-6 |
| **Communication 101R, 103R, or 112R** | 3 |
| Computer Skills-met by ECI 304 (see prerequisites) | 3 |
| **History 104H (United States)** | 3 |
| **History 102H, 105H, 101H, or 103H** | 3 |
| **Economics 200S, 201S, or 202S** | 3 |
| **Geography 100S or 101S** | 3 |
| Philosophy Requirement (150P preferred) | 3 |
| **Math 102M or 162M** | 3 |
| **Biology 108N-109N or 115N-116N** | 8 |
| **TOTAL** | **41-50** |

Content Requirements

| English 327W | 3 |
| English 350, 370, 477 or 444 | 3 |
| English 336, 463, or 465 | 3 |
| History 356 | 3 |
| History 345, 346, 348, 350, 351 or 361 | 3 |
| History 352, 355, 362, or 363 | 3 |
| Political Science 101S or 102 | 3 |
| Political Science 331 or 311 | 3 |
| Geography 350, 250, 310, 451, 455, 458, or POLS 414 | 3 |
| Math 335 | 3 |
| Math 302 | 3 |
| Statistics 130M or 306 | 3 |
| Geology 210 or OCEN 402 | 3-4 |
| Physics 101N or 111N or CHEM 101N or 115N | 4 |
| PE 327 or HE 230 and 1 PE activity credit | 4 |
| MUSC 308 or ARTS 305 | 3 |
| **TOTAL** | **50-51** |

Professional Education (meets upper-division general education)

| ECI 301 Foundations, Observation, & Participation | 3 |
| ECI 304 Educational Applications of Technology (meets computer skills requirement) | 3 |
| ESSE 413 Fundamentals-Human Growth & Development | 3 |
| ESSE 468 Language Acquisition | 3 |
| ECI 432 Instructional Strategies PK-6 Language Arts | 3 |
| ECI 433 Instructional Strategies PK-6 Mathematics | 3 |
| ECI 434 Instructional Strategies PK-6 Science | 3 |
| ECI 435 Instructional Strategies PK-6 Social Studies | 3 |
| ECI 436 Practicum | 3 |
| **TOTAL** | **26** |

**TOTAL DEGREE CREDITS:** 117-127 credit hours***

Bachelor of Arts and Bachelor of Science—Interdisciplinary Studies (IDS) Major,
Individualized Integrative Studies (IIS)

Interdisciplinary studies at Old Dominion University is a flexible degree program which seeks to serve the needs of students whose goals cannot be met within existing departmental curricula. Through interdisciplinary studies, students are able to combine courses from three or more disciplines into an individualized degree. The flexibility of the program makes possible the pursuit of a wide variety of interests in areas such as medieval and renaissance studies, advertising, legal studies, biological illustrations, public relations, management of technical services, photo journalism, and health care administration.

Students who decide to design their own degrees must have departmental approval and faculty sponsorship. The degree awarded is a Bachelor of Science or Bachelor of Arts with a major in interdisciplinary studies in the student's area of interest. Requirements
LOWER DIVISION GENERAL EDUCATION

(credits)

Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)

Oral Communication

Mathematics

Foreign Language (Proficiency through 202 required for BA and not met by associate degree)

Computer Skills

Fine and Performing Arts

History

Literature

Philosophy

Natural Science and Technology

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

Social Science

Individualized Program Core Requirements

IDS 300W Interdisciplinary Theory and Concepts

IDS 487 Interdisciplinary Seminar

IDS 497 or 498 Senior Project

An approved upper-level interdisciplinary course

Concentration

All individualized program students must design a concentration which includes a minimum of 42 credit hours. This includes courses from three or more disciplines that the student integrates into a single program subject to departmental approval. At least 30 hours must be upper level. No more than two-thirds of the major area may be in one discipline.

All IDS individualized program students must prepare and submit a proposal to the Interdisciplinary Studies Committee for approval. The purpose of the proposal is to outline the courses and other learning experiences which will lead to the fulfillment of the proposed course of study. The proposal must include at least 30 hours of course work from three or more disciplines to be taken after the student’s acceptance into the program. Students must also identify two faculty sponsors who will provide guidance as they develop their proposals and progress through the program. Acceptance decisions are made by the director of Interdisciplinary Studies, the Interdisciplinary Studies Committee, and faculty sponsors. For more information see http://web.odu.edu/al/artsandletters/ids/topics.htm

Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Science Degree–Interdisciplinary Studies Major–Professional Writing Concentration

The outline of courses below specifies general education requirements, professional writing core requirements and concentration requirements. All courses taken for the major must be completed with a grade of C- or better.

LOWER DIVISION GENERAL EDUCATION

See the course listing for the B.A. and B.S. in interdisciplinary studies.

Professional Writing Core courses

IDS 300W Interdisciplinary Theory & Concepts

COMM 305 Foundations of Professional Communication

ENGL 327W Advanced Composition I

ENGL 325 Intro to Rhetorical Studies

ENGL 334W Technical Writing

Organizational Foundations (Select four from the following - meets upper-division general education)

CS 300 Computers in Society

MGMT 325 Contemporary Organizations and Management

MGMT 340 Human Resources Management

MGMT 451 Organizational Behavior

MKTG 311 Marketing Principle & Problems

MKTG 402 Consumer Behavior

MKTG 411 Multi-National Marketing

PHIL 303 Business Ethics

PSYC 303 Industrial/Org. Psychology

PSYC 343 Personnel Psychology

PSYC 344 Human Factors

PSYC 345 Organization Psychology

Strategic Communications in Business and the Professions


Professional Writing

Select four courses from the following.

ENGL 335 Editing and Document Design

ENGL 350 Aspects of the English Language

ENGL 368 Writing Internship

ENGL 370 English Linguistics

ENGL 380 Introduction to Journalism and News Writing

ENGL 381 Public Relations

ENGL 395/396 Topics in English

ENGL 427W Writing in the Disciplines

ENGL 435W Management Writing

ENGL 468 Advanced Writing Internship

ENGL 477 Language, Gender and Power

ENGL 481 Advanced Public Relations

ENGL 484 Feature Story Writing

ENGL 485W Editorial and Persuasive Writing

ENGL 486 Media Law and Ethics

ENGL 495/496 Topics in English

UPPER DIVISION GENERAL EDUCATION

Met in the major

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major with no grade less than C- in major courses, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Science Degree–Interdisciplinary Studies Major–Zoological Parks Management Concentration

The 120-credit-hour zoological parks management concentration is comprised of the University general education requirements, interdisciplinary studies core courses and concentration requirements. All courses taken in the major must be fulfilled with a grade of C- or better. Students admitted to the IDS program have a variety of credit options including portfolio review, CLEP, advanced placement, DANTES and forms of awarding credit based on test performance. The outline of courses below specifies zoological parks management education, core requirements and concentration requirements.

LOWER DIVISION GENERAL EDUCATION

See the course listing for the B.A. and B.S. in interdisciplinary studies.
### Interdisciplinary Studies Core (10-13 credits):
- IDS 300W Interdisciplinary Theory and Concepts 3
- IDS 487 Interdisciplinary Seminar 1
- IDS 497 or 498 Senior Project 3-6

An approved upper-level interdisciplinary course 3

See [http://web.odu.edu/al/artsandletters/ids/IDSCourseList.html](http://web.odu.edu/al/artsandletters/ids/IDSCourseList.html).

### Zoological Parks Management Concentration (30 hours)

**BIOL 203 Evolution** 3  
**BIOL 205 Principles of Ecology** 3  
**BIOL 209 Vertebrate Zoology** 3  
**BIOL 441 or 404 Animal Behavior/Conservation Biology** 3  
**ACCT 201 Principles of Accounting I** 3  
**ACCT 202 Principles of Accounting II** 3  
**FIN 323 Introduction to Financial Management** 3  
**MGMT 325 Contemporary Organizations and Management** 3  
**MKTG 311 Marketing Principles and Problems** 3  
**PHIL 345 or 344T Bioethics/Environmental Ethics** 3

### Concentration electives
A minimum of 15 credits from the following (students must take appropriate prerequisites):
- Three hours from BIOL 332, 404, 421, 424, 431, 441, 473  
- Three hours from ECON 301, FIN 319, 331, MGMT 402  
- Nine hours from any of the above or MGMT 340, MKTG 402, PSYC 306, 313, RTS 461

### General electives
E elective courses may be taken for the remainder of the 120-credit minimum required for the degree.

### UPPER DIVISION GENERAL EDUCATION

**Option A.** Approved Minor, 12-24 hours; also second degree or second major.

**Option B.** Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

### Bachelor of Science Degree—Interdisciplinary Studies Major—Work and Professional Studies Concentration

The interdisciplinary studies major in work and professional studies is offered through the College of Arts and Letters at Old Dominion University and the higher education centers (Northern Virginia, Virginia Beach, Tidewater, and the Peninsula) using the Virtual Classroom technology. The program offers a 37-hour curriculum focused on the subject of work and labor and provides opportunities for students to integrate interdisciplinary theory and research findings with the application of problem-solving skills in the work environment. Courses are drawn from the disciplines of philosophy, English, sociology, history, psychology, economics, management, and occupational and technical studies to examine the meaning and experience of work. Old Dominion University students admitted to the program have a variety of credit options including portfolio review, CLEP, DANTES and departmental exams. For more information about the work and professional studies emphasis, contact Lucien Lombardo at llombard@odu.edu. Additional information, including application information, can be found at [http://www.odu.edu/al/wps/](http://www.odu.edu/al/wps/).

### LOWER DIVISION GENERAL EDUCATION Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

### Interdisciplinary Studies Core (7-10 credit hours)
- IDS 300W Introduction to Interdisciplinary Studies 3  
- IDS 487 Interdisciplinary Seminar 1  
- IDS 497 Senior Capstone Project 3  

### Understanding Work and Labor
(minimum nine credit hours chosen from the following)
- ECON 407 Labor Economics 3  
- HIST 355 The United States, 1945-1991 3  
- IDS 495 Topics (as approved) 3  
- MGMT 325 Contemporary Organizations and Management 3  
- MGMT 350 Employee Relations: Problems and Practices 3  
- MGMT 360 Labor Management Relations 3  
- MGMT 451 Organizational Behavior 3  
- OTS 370T Technology and Society 3  
- PHIL 303 Business Ethics 3  
- PHIL 304 Marxism 3  
- PHIL 355T Computer Ethics 3  
- PHIL 442 Studies in Applied Ethics 3  
- PHIL 495 Philosophy of Work 3  
- POLS 396/COMM 395 Internet Policy 3  
- SOC 395 Perspectives on Organizational Behavior 3  
- SOC 415 Sociology of Work and Occupations 3  
- SOC 495 Sociology of Work, Family and Children 3  
- WMST 390T Women and Technology Worldwide 3

### Applications

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 351 Interpersonal Communication in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>COMM 355 Organizational Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 421 Communication and Conflict Management</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 380 Introduction to Journalism</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 334W Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 381 Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 435 Management Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 439W Electronic Writing</td>
<td>3</td>
</tr>
<tr>
<td>FIN 411 Employee Benefit Planning</td>
<td>3</td>
</tr>
<tr>
<td>IDS 495 Topics (as approved)</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 340 Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>OTED 400 Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>OTS 351 Communication Technology</td>
<td>3</td>
</tr>
<tr>
<td>OTS 402 Training Methods</td>
<td>3</td>
</tr>
<tr>
<td>OTS 495 Career Management Assessment and Planning</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 303 Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 343 Personnel Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 344 Human Factors</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 345 Organizational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Additional hours selected from either Understanding Work and Labor or Applications

**Option A.** Approved Minor, 12-24 hours; also second degree or second major.

**Option B.** Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

### INTERNATIONAL STUDIES

**Bachelor of Arts—International Studies Major**

Maura Hametz, Director
The Bachelor of Arts in international studies (BAIS) is an interdisciplinari-
y program that offers students a chance to explore the interrelations
among nations and peoples and to study world affairs from a variety of
perspectives. The BAIS major and minor center on studies in foreign
languages, geography, history, and political science. Students have con-
siderable flexibility to structure their academic programs to meet their
particular needs and interests or to focus in a variety of geographical or
topical fields.

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C or PHIL 111C before declaring major)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Foreign Language (satisfied in the major)</td>
<td>6-12</td>
<td></td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>History (Grade of C or better required)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Literature (FLET 100L recommended)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
<td></td>
</tr>
</tbody>
</table>

Additional, 3-4 credit hours of Natural Science or Technology are required.

Social Science (satisfied in the major) | 6 |

Foundation courses (Grade C or better required)

- GEOG 100S (fulfills 3 hours of social science general education) | 3 |
- POLS 100S (fulfills 3 hours of social science general education) or POLS 102 | 3 |
- ECON 201S (fulfills 3 hours of social science general education) | 3 |

CORE COURSES

Foreign Language | 18-21 |

A minimum of six credits beyond the requirement for the Bachelor of Arts
(preferably in the language pursued for the B.A.) or demonstrated profi-
ciency to that level as approved by the chair of the Department of
Foreign Languages and Literatures. Current language offerings include:
Arabic, Chinese, French, German, Hebrew, Italian, Japanese, Latin,
Portuguese, Spanish, and Russian.

Native speakers of languages other than English are not
required to fulfill the language requirement upon presentation
of a passing TOEFL score.

Methods Course Work

- GEG 308 or HIST 201 or POLS 308 or SOC 337 or WMST 470 | 3 |

Required Courses

- GEOG 305 World Resources or 320 Political Geography | 3 |
- HIST 405 History of International Relations: Nineteenth Century Systems | 3 |
- POLS 323 International Political Economy or 324 International Relations Theory | 3 |

Senior Seminar (C or better required)

- GEOG 480W, HIST 480W, POLS 480W or other approved course | 3 |

Upper-Division Electives

- 15 hours of 300- or 400-level approved electives to include: GEOG 300- or 400-level elective | 3 |
- HIST 300- or 400-level elective | 3 |
- POLS 300- or 400-level elective | 3 |
- 300- or 400-level electives – 3 hours must be taken in a discipline other than geography, history or political science | 6 |

Approved courses appear on the "Approved List of Courses for Interna-
tional Studies" available from the program director or at http://
web.odu.edu/ai/artsandletters/bais/index.html. Additional courses with an
international focus may be approved by the program director. Up to six
credits may be taken through participation in a model international orga-
nization (Model United Nations, Model Organization of American States
or Model League of Arab States). Three hours of an approved practicum
may count toward the major.

Study Abroad/International Experience

Study abroad or international experience is encouraged for international
studies majors and Old Dominion University credit is available for study
abroad programs. The Office of Study Abroad offers information, advis-
sing services and scholarships for enrolled students.

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point av-
erage of 2.00 overall and in the major, 120 credit hours, passage of the Exit
Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Arts with Honors—International Studies Major

Students may earn honors in the major by fulfilling all the degree re-
quirements and meeting the honors requirements indicated below. The
requirements for honors do not increase the credit hours necessary for
the major. The requirements are as follows:
1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.3.
3. Earn honors in nine hours of courses in the major at the 300/400
level, with no more than six hours taken from the same instructor.

Minor in International Studies

The minor in international studies requires 15 credit hours including:
1. GEOG 100S or POLS 100S or POLS 102
2. Twelve hours of upper-division approved electives to include:
   - GEOG 300- or 400-level elective | 3 |
   - HIST 300- or 400-level elective | 3 |
   - POLS 300- or 400-level elective | 3 |
   - 300- or 400-level elective | 3 |

Approved courses appear on the “Approved List of Courses for Interna-
tional Studies” available from the program director or at http://web.odu.edu/ai/artsandletters/bais/index.html.

For completion of a minor, a student must have a minimum overall
 cumulative grade point average of 2.00 in all courses taken toward the
minor and complete a minimum of six hours in upper-level courses in the
minor requirement through courses offered by Old Dominion University.

Five-Year B.A./M.A. Program in International Studies

Qualified students can pursue a five-year accelerated B.A./M.A gradu-
ate degree in international studies.

Requirements for Admission

Requirements for admission are:
1. A declared major in the B.A. program in international studies (BAIS).
2. A minimum of 60 hours completed, including at least six hours of
   300/400 courses in the major.
3. A GPA of 3.00 at the time of admission.
4. Application to the accelerated B.A./M.A. program in international
   studies, approved by both the B.A. and M.A. directors.

Students pursuing the accelerated B.A./M.A program will fulfill all lower-
level General Education requirements which have been approved for the
BAIS and meet the requirements to earn a B.A. in international studies.

Method Courses (three credits)

- GEOG 308 or POLS 308 or HIST 201 or SOC 337 or WMST 470 | 3 |

Foreign Language | 18 |

A minimum of six credits beyond the requirement for the Bachelor of
Arts (preferably in the language pursued for the B.A.) or demonstrated profi-
ciency to that level as approved by the chair of the Department of
Foreign Languages and Literatures. Current language offerings include:
Core Courses in Geography, History, Political Science, and Cultural Studies (21 Credits)

1. Five of the following six courses are required. GEOG 305 World Resources
   GEOG 320 Political Geography
   HIST 405 International Relations: 19th Century
   HIST 406 International Relations: 20th Century
   POLS 323 International Political Economy
   POLS 324 International Relations Theory

2. Cultural Studies: Students select one course that links culture to other aspects of international studies in an integrative, interdisciplinary way. Examples are Foreign Languages in English Translation (FLET), English World Literature courses, and other culturally focused, international, interdisciplinary courses, such as those developed under the Teaching Across Borders Initiative and those from disciplines other than GEOG, HIST, and POLS as available and approved by the BAIS director.

3. BAIS Senior Seminar: GEOG/HIST/POLS 480W or other approved course

Bridge Courses (to be taken during Senior year)

IS 606 Research Methods
IS 606 U.S. Foreign Policy and World Order
POLS 601 International Relations Theory
ECON 605 International Economics

An overall GPA of at least 3.00 is required in these courses.

The B.A. in international studies will be awarded on completion of 120 credit hours including all the preceding courses and other University requirements for graduation.

Master of Arts Requirements

After obtaining the B.A. in international studies, students must complete the following:

1. Four graduate courses in one of the following fields of concentration (instead of the three required for M.A. students): international relations/U.S. foreign policy; conflict and cooperation; international political economy and development; and interdependence and transnationalism.

2. Two electives at the 600 level or above. At least one should have a regional focus (e.g., Europe, Asia, Middle East, Latin America).

The M.A. in international studies requires 18 credits beyond the four Bridge Courses (the MAIS core courses). It is anticipated that a student who has completed the BAIS could thus take three courses in the fall and spring semesters. Comprehensive exams will be offered at the end of the spring semester and at the end of the summer. There will be no thesis option.

Additional Requirements

Students in the accelerated B.A./M.A. program must also complete the following:

1. Fulfill the BAIS language requirement (which also fulfills MAIS requirements).
2. Take the GRE during their last semester of BAIS work with an expected score of 1100 (verbal and quantitative totals).
3. Have an overall GPA of 3.00 in the seven core undergraduate courses and at least a GPA of 3.00 in the four Bridge courses (MAIS core courses).
4. Maintain an overall GPA of 3.00. (Students failing to maintain a 3.00 GPA may revert to the regular BAIS degree and count up to 12 hours of completed graduate core courses toward the BAIS.)
5. Complete an application form for Old Dominion University graduate admission. Students specializing in a region (e.g., Asia, Latin America, etc.) are encouraged to complete a minor at the undergraduate level.

Additional Explanations

1. Students interested in the B.A./M.A. program will be advised as early as possible and start the program during their Junior year in order to meet all the requirements. Thus, students may apply for admission to the accelerated program any time after they have earned 60 credits (including at least six hours of 300/400 courses in the major).

2. Students will receive the B.A. degree after fulfilling all the requirements for the undergraduate degree. Students whose overall GPA drops below a 3.00 before attaining the B.A. degree can revert to the regular BAIS program and count any graduate credits they may have earned toward the BAIS. Students with a GPA of less than 3.00 at the end of their fourth year will not be permitted to continue toward the M.A. degree.

3. Students in the accelerated program must meet the requirement that BAIS students must receive a minimum grade of C (2.00) in the following undergraduate courses: ENGL 110C; ENGL 111C, HIST 111C or PHIL 111C; GEOG 100S; POLS 100S or 102; ECON 201S; and the two history perspective courses chosen from HIST 101H, 102H, 103H, 104H, and 105H.

GRADUATE PROGRAM IN INTERNATIONAL STUDIES

Kurt Taylor Gaubatz, Director

Old Dominion University offers M.A. and Ph.D. degrees in international studies through the Graduate Program in International Studies (GPIS).

GPIS is an innovative and independent unit, offering advanced research and graduate training concerning global problems and transnational issues. Fields of concentration include: U.S. foreign policy and international relations, conflict and cooperation, international political economy and development, interdependence and transnationalism, and comparative and regional studies.

Master of Arts—International Studies

Admission Requirements

What to Submit with Application

All candidates for admission into the M.A. must submit:

1. Graduate Record Examination (GRE) scores;
2. Official transcripts of all undergraduate or prior graduate course work submitted directly by all universities attended;
3. Two letters of recommendation addressing the candidate’s capacity to undertake graduate work in international/global issues;
4. An essay of not more than 500 words describing interest in and capacity for advanced training in global/transnational issues; and
5. One example of writing or research (a paper submitted to a seminar, a publication or report, or another comparable example).

Applications for fall semester admission must be submitted no later than February 15 if applying for financial support or April 1 if applying for admission only. Applications are also accepted for spring semester admission and should be submitted by October 15. Applications received after the deadline will be considered on a space-available basis. Individuals residing in other countries should mail materials well in advance of those dates. All required forms and documents should be sent directly to the Graduate Admissions Office.

Any prior graduate course work taken at Old Dominion University (e.g., in nondegree status) or at another institution can be counted toward the M.A. degree only in accordance with the provisions governing transfer of credit and the director’s approval.

Admission Standards

1. All applicants to the M.A. program must hold a baccalaureate degree or equivalent.
2. Candidates for the M.A. must attain a 3.00 cumulative GPA in all undergraduate courses. A GRE score of 1100 (combined verbal and quantitative) is normally expected.
3. Individuals whose native language is not English must submit a score of 230 on the computer-based TOEFL (the equivalent of 570 in the older, paper-based score scale).

The GPIS Admissions Committee strives to take into account the overall qualifications of individual applicants and reserves the right, in some cases, to admit students who do not fully meet all of these requirements.
Doctor of Philosophy-International Studies

Admission Requirements

What to Submit with Application

All candidates for admission into the Ph.D. must submit:
1. Graduate Record Examination (GRE) scores;
2. Official transcripts of all undergraduate or prior graduate course work submitted directly by all universities attended;
3. Three letters of recommendation (at least two of which should be from prior professors) addressing the candidate's capacity to undertake graduate work in international/global issues;
4. An essay of not more than 500 words describing interest in and capacity for advanced training in global/transnational issues; and
5. One example of writing or research (a paper submitted to a seminar, a publication or report, or other comparable example.

Applications for fall semester admission must be submitted no later than February 15 if applying for financial assistance or March 15 if applying for admission only. Applications are also accepted for spring semester admission and should be submitted by October 15. Individuals residing in other countries should mail materials well in advance of those dates. All required forms and documents should be sent directly to the Graduate Admissions Office.

Any prior graduate course work taken at Old Dominion University (e.g., in nondegree status) or at another institution can be counted toward the Ph.D. degree only in accordance with the provisions governing transfer of credit and the director’s approval.

Admission Standards

1. Applicants to the Ph.D. program typically hold a master's degree in a related field of study, though admission is sometimes granted to especially strong applicants without previous graduate work.
2. Ph.D. candidates are generally expected to attain a GRE score of 1200 (combined verbal and quantitative) and have at least a 3.00 cumulative GPA in undergraduate and graduate courses, with a somewhat higher GPA for courses related to international, global or transnational issues.
3. Individuals whose native language is not English must submit a score of 230 on the computer-based TOEFL (the equivalent of 570 in the older, paper-based score scale).

The Admissions Committee strongly recommends prior international experience (residence, study or work) and foreign language training for all Ph.D. applicants. Evidence of substantial international and foreign language background is highly desirable for applicants.

The GPIS Admissions Committee strives to take into account the overall qualifications of individual applicants and reserves the right, in some cases, to admit student who do not fully meet all of these requirements.

Degree and Continuance Requirements

Credits for the M.A. The M.A. requires 33 credits, of which at least 27 must be at the 600 level or above. The required course work for all M.A. students includes the basic methodology course (IS 600), but does not include any courses needed for demonstrating foreign language competency. M.A. candidates writing theses will incorporate into their 33-credit program six credits of directed research on the thesis. Students pursuing a non-thesis track will take a four and 1/2 hour comprehensive examination after the completion of their course work.

Credits for the Ph.D. The Ph.D. requires 78 credits, which must include at least 48 hours at the post-master’s level (i.e., courses at the 700 or 800 level). These 48 hours include a minimum of 12 and a maximum of 18 dissertation credits. The 78 credits do not include any courses needed for demonstrating foreign language competency. Each student’s program of study is supervised by a faculty committee. Upon completion of coursework, Ph.D. students must pass a written and an oral comprehensive examination, submit a dissertation prospectus, write a dissertation, and undergo an oral defense of the dissertation.

Required Courses. All M.A. and Ph.D. students must take IS 600, Research Methods; IS 606, American Foreign Policy and World Order; ECON 650, International Economics; and POLS 601, International Relations Theory. Ph.D. candidates must also take IS 620, Advanced Methods. Each required course must be completed with a grade of B (3.00) or above. M.A. students must fulfill the requirements of nine credit hours in one field of concentration. Ph.D. students must take fifteen credit hours in one field of concentration and nine credit hours from another field, totaling 24 credit hours.

Fields, Area/Region, Methodology, Language and Foreign Experience Requirements: Fields of concentration include U.S. foreign policy, conflict and cooperation, international political economy and development, interdependence and transnationalism, and comparative and regional studies.

Methodology Requirements. The M.A. requires one methodology course (IS 600). M.A. students are encouraged to take further methods courses as electives. All Ph.D. students must complete a sequence of two basic methods courses beginning with IS 600. Students holding an M.A. from another institution who are entering the Ph.D. program may present transcripts showing a B (3.00) or above, plus syllabi and other documentation, from a similar introductory methods course to be exempted from IS 600.

Language Requirements. M.A. and Ph.D. students must demonstrate reading competence in one foreign language other than English. International students who have English as a second language fulfill this requirement.

Foreign language competence can be demonstrated in one of two ways:
1. Students may complete a third year of language instruction at Old Dominion University (students may choose to enter the third year through a University placement test) or other institutions. A grade of B- or above in both semesters of third-year instruction will demonstrate competency in that language.
2. Students may take a language test. Exams are administered (for a fee) by the Department of Foreign Languages and Literatures. GPIS requirements concern reading comprehension competence. For more information about which skills will be tested and what standards of competency are required, contact GPIS. If a student wishes to demonstrate competency in an uncommonly taught language, GPIS will endeavor, so far as practicable, to arrange an examination by Old Dominion University faculty and/or consultants. For more information about this method for demonstrating language competency, contact GPIS.

Comprehensive Examinations. In consultation with their advisors, M.A. students will select either a thesis or nonthesis option. Students selecting the nonthesis track must pass a written comprehensive examination. Thesis students must pass an oral defense of their thesis. All Ph.D. students must pass a written comprehensive examination. Students who pass the written comprehensive examination must then pass an oral comprehensive examination.

The M.A. or Ph.D. comprehensive examination may not be scheduled before students have completed all core and methodology requirements, nor may the M.A. or Ph.D. comprehensive examination be scheduled prior to the last semester in which regular course work is taken. Ph.D. students are also required to fulfill the foreign language requirement before taking the comprehensive examination. M.A. and Ph.D. comprehensive examinations are scheduled twice a year. If M.A. students fail the written comprehensive on the first attempt, they may retake the entire written comprehensive exam only once, no earlier than one semester later. Ph.D. students failing the written comprehensive on the first attempt may retake the written comprehensive exam only once, no earlier than one semester later.

Theses. M.A. students choosing the thesis option will submit a thesis prospectus to the chair of their thesis committee for approval after the completion of 18 credits or at the beginning of the third semester in the program. The thesis should be submitted to the thesis committee for its approval at least two weeks before a defense is scheduled. The committee will schedule the student’s oral defense of the thesis when the thesis appears to meet GPIS standards for master's theses. The oral defense will concern questions of substance and methodology.

Dissertations. A dissertation is required of all Ph.D. students. A dissertation prospectus will be prepared after the successful completion of the comprehensive examination. If the student’s graduate committee approves the prospectus, the student will proceed to research and write the dissertation. An oral defense of the dissertation will be scheduled after a draft is approved by the committee.

Grade Requirements. All M.A. and Ph.D. students will be graded on the traditional A, B, C, F scale (with pluses and minuses) in all courses. Pass/Fail evaluations will be utilized only in the case of registration for internships or for thesis or dissertation research, or when specifically approved by the director.

Graduate students for whom grade point averages fall below 3.00 (B) will be placed on a probationary status. After two consecutive semesters below this average or the accumulation of two grades of “C” or below,
the director will take under consideration, in consultation with faculty, termination of the student’s program.

**Time Limit and Residency Requirements.** The master’s degree can be completed in four full-time semesters, although many M.A. candidates continue the degree over a longer period on a part-time basis. The M.A. must be completed within a six-year period.

The doctoral program must be completed within eight years of entry into Ph.D. course work.

**Graduate Certificates.** Concurrent with their degree work, MAIS students can earn graduate certificates in two areas. The 12-credit Certificate in the History of Strategy and Policy is awarded upon completion of HIST 631-632 (Studies in the History of Strategy and Policy), which corresponds to the U.S. Naval War College course of the same name, and six credits from designated courses in history, political science, economics, and geography.

Students seeking to combine international studies and women’s studies may complete the 15-credit program leading to the certificate in Women’s Studies, which is offered in cooperation with the Institute of Humanities and the Women’s Studies Program. Students should contact the director of women’s studies at (757) 683-3823 for information.

**Transfer Credit.** Twelve graduate credits earned at other institutions or at Old Dominion University may be applied toward the fulfillment of degree requirements. Transfer credit, including nondegree credit earned at Old Dominion, is accepted as degree credit at the discretion of the director.

**Financial Aid.** Full-time students are eligible to apply for University fellowships, teaching and research assistantships, and tuition grants which are awarded on a competitive basis.

**Nondegree Students.** Nondegree students must obtain the approval of the director before enrolling in graduate international studies classes.

**Additional Information.** Please see the GPISHandbook and website at www.odu.edu/al/gpis/. For other issues concerning GPIS, please contact the Graduate Program in International Studies (GPIS), 621 Batten Arts and Letters Building, Old Dominion University, Norfolk, VA 23529-0086, USA. Telephone: 757-683-5700. Fax: 757-683-5701. E-mail: isgpd@odu.edu.

**MUSIC**

Dennis J. Zeisler, Chair
Nancy K. Klein, Graduate Program Director
Jo Ann Sims, Chief Departmental Advisor

www.odu.edu/al/artsandletters/music/index.html

The Department of Music offers applied music instruction and course work leading to the following degrees: Bachelor of Music with a major in performance (options in voice, piano, organ, harpsichord, orchestral instruments, and guitar); the Bachelor of Music with a major in composition; the Bachelor of Arts with a major in music; and the Bachelor of Music in Music Education (options in vocal or instrumental music). In addition to the work offered for degree students in music, there are available to non-music majors a minor in music (emphasis in composition, performance, or music history) and courses in the appreciation, history, methods, and literature of music; participation in the concert band, orchestra, choir, and other ensembles; and individual instruction in piano, organ, voice, guitar, harpsichord, and the orchestral and band instruments.

**Bachelor of Music—Composition Major**

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (satisfied in the major by MUSC 432)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (see departmental requirements)</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major by MUSC 221)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (chosen from ARTH 121A, ARTS 122A, DANC 185A, THEA 241A)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Eight credit hours of Natural Science with labs in sequence. Additional Natural Science or Technology requirement</td>
<td></td>
</tr>
</tbody>
</table>

satisfied in the major (MUSC 33ST).

**Social Science**

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUSC 221 Music Theory I</td>
<td>3</td>
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<tr>
<td>MUSC 222 Music Theory II</td>
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<tr>
<td>MUSC 223 Ear Training, Sight Sing, Dictation</td>
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<tr>
<td>MUSC 224 Ear Training, Sight Sing, Dictation</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 261 Music Literature Survey I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 262 Music Literature Survey II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 308 Principles of Conducting</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 321 Advanced Theory I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 322 Advanced Theory II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 323 Adv Ear Trn, Sight Sing</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 324 Adv Ear Trn, Sight Sing</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 335T Intro to MIDI Technology (satisfies Technology requirement)</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 336 Recording/Electronic Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 361W History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362 History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 414 Advanced Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 421 Counterpoint</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 422 Form and Analysis</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 424 Orchestration</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 466 Modern Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 232 Hour lesson; Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 331 Hour lesson; Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 332 Hour lesson; Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 431 Hour lesson; Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>MUSA 432 Hour lesson; Applied Composition</td>
<td>3</td>
</tr>
<tr>
<td>Two Music History electives chosen from MUSC 460, 491, 492, or 494</td>
<td>6</td>
</tr>
<tr>
<td><strong>Large Ensemble</strong></td>
<td>3</td>
</tr>
<tr>
<td>Students are required to earn credits through participating in ensembles appropriate to their specialties. Large ensembles include: concert band, wind ensemble, symphony orchestra, or concert choir.</td>
<td></td>
</tr>
<tr>
<td><strong>Small Ensemble</strong></td>
<td>2</td>
</tr>
<tr>
<td>Small ensembles include: Madrigal Singers, Collegium Musicum, opera workshop, and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.</td>
<td></td>
</tr>
<tr>
<td>MUSC 101-106 Piano</td>
<td>6</td>
</tr>
<tr>
<td>MUSC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Applied Music in Secondary Performance Area</td>
<td>2</td>
</tr>
<tr>
<td>Students must earn a grade of C or better in MUSC 221, 222, 223, 224, 321, and 323 to advance to the next level. French, German, or Italian are strongly recommended to fulfill General Education Foreign Language requirement.</td>
<td></td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

**Option A. Approved Minor, 12-24 hours; also second degree or second major.**

**Option B. Cluster, 9 hours (3 hours may be in the major area of study.)**

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 129 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Bachelor of Music—Performance Major**

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (satisfied in the major by MUSC 432)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (satisfies Technology requirement)</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major by MUSC 221)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (chosen from ARTH 121A, ARTS 122A, DANC 185A, THEA 241A)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

106 OLD DOMINION UNIVERSITY
Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

**Social Science**

**Departmental Requirements**

MUSC 221 Music Theory I 3
MUSC 222 Music Theory II 3
MUSC 223 Ear Training, Sight Sing, Dictation 1
MUSC 224 Ear Training, Sight Sing, Dictation 1
MUSC 261 Music Literature Survey I 1
MUSC 262 Music Literature Survey II 1
MUSC 309 Principles of Conducting 1
MUSC 321 Advanced Theory I 2
MUSC 322 Advanced Theory II 2
MUSC 323 Adv Ear Trn, Sight Sing 1
MUSC 324 Adv Ear Trn, Sight Sing 1
MUSC 361W History of Music 3
MUSC 362 History of Music 3
MUSC 413 or 414 Adv Choral OR Instrumental Conducting 2
MUSC 421 Counterpoint 2
MUSC 422 Form and Analysis 1
MUSC 445 App Music Pedagogy (Satisfies oral communication requirement) 1
MUSC 446 App Music Pedagogy (Satisfies oral communication requirement) 1

24 credit hours must be taken in the instrument of concentration including six credits at MUSC 451-452 level. Three hours of electives are required. Successful completion of a half-hour 200-level recital and a full-hour 400-level recital is also required. Students must earn a C or better in MUSC 221, 222, 223, 224, 321, and 323 to advance to the next level.

**Students must select one of the following concentrations:**

**Orchstral Instruments Concentration**

MUSA 151-352 Applied Lessons 18
MUSA 451 Hour Lesson 3
MUSA 452 Hour Lesson 3
MUSC 101-104 Piano 4
MUSC 424 Orchestration 2
Three music history electives chosen from MUSC 460, 466, 491, 492, or 494 9
MUSC Band or Orchestra 4
Small Instrumental Ensemble+ 4
Applied Music in Secondary Performance Area (additional piano may be used) 2

**Voice Concentration**

101F-102F Foreign Language other than that used to satisfy lower division General Education (French, German or Italian strongly recommended) 6
MUSC 101-106 Piano 4
Two music history electives chosen from MUSC 460, 466, 491, 492, or 494 6
MUSC 345 Diction for Singers 1
MUSC 346 Diction for Singers 1
Piano Proficiency Exam 1
Concert Choir 4
Opera Workshop 1
Small Vocal Ensemble 1
Applied Music in Secondary Performance Area (additional piano may be used) 2

**Piano, Organ, Harpsichord, or Guitar Concentration**

Three music history electives chosen from MUSC 460, 466, 491, 492, or 494 9
MUSC 424 Orchestration 2
Applied Music in Secondary Performance Area (additional piano may be used) 2
Ensemble+ 6-8

**+Ensemble Requirements.** Students are required to earn credits through participating in ensembles appropriate to their specialties. Instrumental and voice majors will be required to participate in four semesters of large ensemble and four semesters of small ensemble. Keyboard majors will have a six semester requirement, of which two must be in large ensemble and two in small ensemble.

Large ensemble includes: concert band, wind ensemble, symphony orchestra, or concert choir.
Small ensemble includes: Madrigal Singers, Collegium Musicum, opera workshop, and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 127 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Bachelor of Arts—Music Major**

James Kosnik, Program Advisor

**LOWER DIVISION GENERAL EDUCATION Credits**

Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major) 6
Oral Communication 3
Mathematics 3
Foreign Language (proficiency in French or German through the 202 level required) 6-12
Computer Skills (satisfied in the major by MUSC 221) 3
Fine and Performing Arts (chosen from ARTH 121A, ARTS 122A, DANC 185A, THEA 241A) 3
History 6
Literature 3
Philosophy 3
Natural Science and Technology 11-12
Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.
Social Science 6

**Departmental Requirements**

MUSC 221 Music Theory I 3
MUSC 222 Music Theory II 3
MUSC 223 Ear Training, Sight Sing, Dictation 1
MUSC 224 Ear Training, Sight Sing, Dictation 1
MUSC 261 Music Literature Survey I 1
MUSC 262 Music Literature Survey II 1
MUSC 309 Principles of Conducting 1
MUSC 321 Advanced Theory I 2
MUSC 322 Advanced Theory II 2
MUSC 323 Adv Ear Trn, Sight Sing 1
MUSC 324 Adv Ear Trn, Sight Sing 1
MUSC 361W History of Music 3
MUSC 362 History of Music 3
Ensemble+ 2
Students are required to earn credits through participating in ensembles appropriate to their specialties. Instrumental and voice and keyboard majors will be required to participate in two ensembles, large or small. Additional credits for participation in ensembles can be used as elective credit.
Large ensembles include: concert band, wind ensemble, symphony orchestra, or concert choir.
Small ensembles include: Madrigal Singers, Collegium Musicum, opera workshop, and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.

Applied Music 4
Music Elective 1
Elective 1
ENGL 327W Advanced Comp I 3

Students must earn a grade of C or better in the following courses to
Students in the B.A. in music program may choose from the following upper-level (300-400) music courses (18 hours required) or may choose an emphasis area:

- MUSC 335T Introduction to MIDI Technology 3
- MUSC 336 Introduction to Multi-Track Recording 3
- MUSC 337 Jazz Improvisation I 3
- MUSC 338 Jazz Improvisation II 3
- MUSC 410 Psychology of Music 3
- MUSC 413 Advanced Choral Conducting 3
- MUSC 414 Advanced Instrumental Conducting 3
- MUSC 421 Counterpoint 2
- MUSC 422 Form and Analysis 2
- MUSC 424 Orchestration 2
- MUSC 460 History of Jazz 3
- MUSC 466 Modern Music 3
- MUSC 491 Music in the Baroque Period 3
- MUSC 492 Music in the Classical Period 3
- MUSC 494 Music in the Romantic Period 3

**Music History (18 hours)**

- MUSC 460 3
- MUSC 466 3
- MUSC 491 3
- MUSC 492 3
- MUSC 494 3
- Music Elective 3

**Music Theory (18 hours)**

- MUSC 335T 3
- MUSC 337 3
- MUSC 338 3
- MUSC 346 French and German Diction for Singers II 1
- MUSC 370/384/386 2
- MUSC 460 3

**Music Elective (upper level) 6**

**Jazz (18 hours)**

- MUSC 335T 3
- MUSC 336 3
- MUSC 337 2
- MUSC 338 2
- MUSC 370/384/386 2
- MUSC 460 3

**Music Elective (upper level) 5**

Students may choose an ensemble or applied music as an elective in the emphasis areas.

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Bachelor of Music—Music Education Major**

Nancy K. Klein, Program Advisor

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major by MUSC 221)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts (chosen from ARTH 121A, ARTS 122A, DAN 185A, THEA 241A)</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

**Natural Science and Technology**

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required (satisfied in the major with MUSC 335T).

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 221 Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 222 Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 223 Ear Training, Sight Sing, Dictation</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 224 Ear Training, Sight Sing, Dictation</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 261 Music Literature Survey I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 262 Music Literature Survey II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 309 Principles of Conducting</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 321 Advanced Theory I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 322 Advanced Theory II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 323 Adv Ear Trn, Sight Sing</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 324 Adv Ear Trn, Sight Sing</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 335T Intro to MIDI Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 361W History of Music</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 362 History of Music</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must earn a grade of C or better in MUSC 221, 222, 223, 224, 321, and 323 to advance to the next level.

**Students must select one of the following concentrations:**

**Instrumental Concentration**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 101 Beginning Piano I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 102 Beginning Piano II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 107 Beginning Voice I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 301 Music Ed: Trumpet</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 302 Music Ed: Brass</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 303 Music Ed: Clarinet</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 304 Music Ed: Woodwind</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 305 Music Ed: Violin</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 306 Music Ed: Strings</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 307 Music Ed: Percussion</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 414 Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>Small Instrumental Ensemble (two semesters)</td>
<td>2</td>
</tr>
<tr>
<td>Large Instrumental Ensemble (five semesters)</td>
<td>5</td>
</tr>
</tbody>
</table>

Students must select one of the following concentrations: Vocal, Keyboard, or Guitar Concentration (must also select a primary and secondary emphasis).

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 345 Italian and English Diction for Singers I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 346 French and German Diction for Singers II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 409 Music Ed: Instru Tech</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 413 Music Ed: Adv Choral</td>
<td>2</td>
</tr>
</tbody>
</table>

Applied Music in Secondary Performance Area (may be additional piano or voice, but not the principal instrument) 2

Applied Music Requirement-MUSA 141-441. Seventeen credit hours of the primary performance area, at least two of which must be at the 400-level, are required. Successful completion of a half-hour recital.

**Voice Emphasis**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 107 Beginning Voice I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 108 Beginning Voice II</td>
<td>1</td>
</tr>
</tbody>
</table>

**Keyboard or Guitar Emphasis**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 107 Beginning Voice I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 108 Beginning Voice II</td>
<td>1</td>
</tr>
</tbody>
</table>
License in Music Education

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education website or the Office of Teacher Education Services and Advising. Education Building 152. The PRAXIS II Music Content Examination (this test is for both vocal and instrumental music candidates) must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 127 credit hours.

The voice concentration requires passage of a voice proficiency examination and a piano proficiency examination before a student is eligible to student teach. The instrumental concentration requires passage of an instrumental proficiency examination and a piano proficiency examination before a student is eligible to student teach.

Professional Education (29 credits)

Vocal, Keyboard, or Guitar
- MUSC 401 Music Ed: Elem Voc Meth 2
- MUSC 402 Music Ed: Prac Elem Voc 1
- MUSC 403 Music Ed: Secondary Voc 2
- MUSC 404 Music Ed: Prac Sec Voc 1

OR Instrumental
- MUSC 405 Music Ed: Ele Inst Methods 2
- MUSC 406 Music Ed: Prac Ele Instrument 1
- MUSC 407 Music Ed: Sec Inst Methods 2
- MUSC 408 Music Ed: Prac Sec Instrument 1

AND
- ECI 301 Social Cultural Foundations of Education 3
- ECI 360 Classroom Management and Discipline 2
- ECI 408 Reading and Writing in Content Area 3
- ECI 485 Student Teaching 12
- ESSE 406 Special Needs Children-General Ed 3
- ESSE 413 Fundamentals-Human Growth and Development 3

UPPER LEVEL GENERAL EDUCATION
Satisfied through the professional education sequence.

Dual Certification–Fifth Year Program

It is possible to receive dual certification (in both instrumental and vocal music education) by completing an additional year of study. The additional course requirements are listed below. The student teaching experience in this program will be a half semester of vocal teaching and a half semester of instrumental teaching. Students interested in dual certification should be advised by the department's music education specialist as early in their degree program as possible.

Instrumental—For those students who have begun the program with an instrumental concentration (as described above) and need to add the vocal component of the five-year program, the following additional courses are required: four hours of piano and five hours of voice; MUSC 401, 402, 403, 404, 413; two hours of concert choir. The student must also pass a voice proficiency examination and a piano proficiency examination prior to student teaching.

Vocal—For those students who have begun the program with a voice, keyboard, or guitar concentration (as described above) and need to add the instrumental component of the five-year program, the following additional courses are required: MUSC 301, 302, 303, 304, 305, 306, 307, 405, 406, 407, 408, 414; two hours of concert band or orchestra.

Ensemble Options for Bachelor of Music and Music B.A.

Majors

Each degree program has specific ensemble requirements, which are listed under the course requirements above.

For the purposes of fulfilling large ensemble requirements, students may use only concert band, wind ensemble, symphony orchestra, or concert choir.

For the purposes of fulfilling small ensemble requirements, students may use only Madrigal Singers, jazz ensemble, brass ensemble, percussion ensemble, guitar ensemble, Collegium Musicum, string ensemble, woodwind ensemble, opera workshop, or piano ensemble.

Numerous other ensembles are offered for credit, including tuba- euphonium ensemble, Pep Band, Jazz Combo, Woodwind Quintet, Brass Quintet, String Quartet, Saxophone Quartet, Barbershop Quartet, Beauty Shop Quartet, and other vocal chamber ensembles. These ensembles are put together when instrumentation allows, and each group is coached by a faculty member. Students should be aware of the necessity for ensemble diversity, and are encouraged to participate in as many different ensembles as their schedules and advisors will allow.

Minors in Music

1. For a minor in music history, the student must complete 18 hours that include MUSC 221-222, 261, 361W, 362, 460, and three hours of 400-level music history.
2. For a minor in composition, the student must complete 18 hours that include MUSC 221-222, 335, 440, MUSA 339, 340, 439, and two additional hours of upper-division music courses.
3. For a minor in one of the several areas of music performance, the student must complete 16 hours that include MUSA 139, 140, 239, 240, 339, 340, 439, 440, and four additional hours of upper-division music courses. Vocal performance minors must take MUSC 345 and 346, and keyboard performance minors must take at least two semesters of ensemble.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Placement Examinations in Music

All applicants for music curricula that require individual performance are required to satisfy auditions in their major performance areas prior to approval for admission to these curricula.

Students transferring into the Department of Music are required to take placement examinations in theory and ear training and in any applied area, including voice or piano class, in which they wish to transfer credit.

Application must be made to the chair of the Department of Music for details and dates of placement examinations and auditions for performing organizations.

Recital Attendance Requirements

All music majors and intended music majors are required, as part of their degree programs, to attend Department of Music-sponsored events each semester, as follows: students taking 12 or more credits in one semester—10 recitals/concerts per semester; less than 12 credits in one semester—five recitals/concerts per semester. Music minor attendance requirements are 3 recitals/concerts per semester. Deficiencies must be made up before graduation. Seniors are exempt.

Additional details may be found in the Music Student Handbook.
Accompanying

All keyboard students are expected to accompany at least once a semester on a General Student Recital, Performance Session, or Applied Music Jury Examination after they have attained the Applied Music numbering of 241 and above or 251 and above, and after they have studied keyboard at Old Dominion University for a minimum of one semester.

Financial Aid

Scholarships equal to as much as full in-state tuition are available for talented students who perform in ensembles. Refer to the Scholarships section of this catalog for more information.

Master of Science in Education—General
Secondary Education Major

There are three options available to those wishing to pursue this degree. These are: (1) problems paper option-31 semester hours, (2) seminar option-37 semester hours, and (3) recital option-37 semester hours with studies in keyboard, voice, instrumental and conducting.

Music courses required for the Master of Science in Education with a major in general secondary education and an interest area in music are MUSC 603, 604, 605 (for an instrumental concentration) and 606 (for a vocal concentration). A minimum of three hours from the following courses is required: MUSC 607, 608, 613, 614, 615, 616, 680, 695. The recital option requires MUSA 651 and 652.

In the cognate area, a minimum of twelve hours, with at least one course required from the historical/philosophical category, is required. Students must complete course work from two of the three following cognitive areas: historical/philosophical, curriculum and instruction, and sociological/psychological. Courses in the historical/philosophical area are: MUSC 513, 560, 591, 592, 593, 594. Courses in the curriculum and instruction area are: MUSC 611, 612, 623, 635, 636, 639. Courses in the sociological/psychological area are: ECI 512, ELS 615, MUSC 691, 692.

The recital option requires MUSA 651 and 652.

Students seeking the Master of Science in Education — general secondary education with an interest area in music education must pass a theory placement test administered by the department; otherwise, students are required to take a music theory review course. Any student wishing to pursue the recital option must be approved by the faculty before studying applied music at the graduate level.

PHILOSOPHY AND RELIGIOUS STUDIES

Lawrence Hatab, Chair
David Loomis, Chief Departmental Advisor
Department Phone: 757 683-3861
Website: www.odu.edu/al/artsandletters/philosophy

The Department of Philosophy and Religious Studies offers a Bachelor of Arts degree in philosophy, philosophy with an emphasis in political and legal studies, and philosophy with an emphasis in religious studies. The program is designed to give students a solid grounding in the historical development of philosophy and an ability to analyze the validity and soundness of arguments proposed in serious discussions of any subject. The emphasis in political and legal studies is designed for students planning to go to law school and students generally interested in social and political philosophy. The emphasis in religious studies is designed to assist the student in understanding the role of religion in human culture.

The requirements are as follows.

Bachelor of Arts–Philosophy Major

<table>
<thead>
<tr>
<th>LOWER DIVISION GENERAL EDUCATION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C, or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (BA students must have competence through the 202 level)</td>
<td>6-12</td>
</tr>
</tbody>
</table>

Fine and Performing Arts | 3 |
History | 6 |
Literature | 3 |
Philosophy | 3 |
Natural Science and Technology | 11-12 |

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

Social Science | 6 |

Departmental Requirements for all Concentrations:
The requirements are a minimum of 30 credit hours in 300-400 level philosophy courses, nine hours of which must be at the 400 level.

History of Philosophy
PHIL 330W Ancient Philosophy | 3 |
PHIL 331 Modern Philosophy | 3 |
PHIL 340 Logic I | 3 |

(Phillip 340 not required for Religious Studies Concentration)

Recent Philosophy
Two courses from PHIL 304, 305, 404, 406, 411, 431 or a seminar in 19th or 20th Century Philosophy | 6 |

Seminar in Philosophy
PHIL 491, 492, 493, or 494 | 3 |

Students must select one of the following concentrations:

General Concentration (12 hours)
Ethics and Values: 3 hours chosen from PHIL 301, 302, 303, 313, 324, 344T, 345, 355T, 410, 411, 412, 441, or 442 | 3 |
Philosophy Electives 300-400 level | 9 |

Political and Legal Studies Concentration (18 hours)
At least six hours from the following:
PHIL 301, 304, 410, 411, 412, 418 or 441 | 6 |
No more than six hours from:
PHIL 302, 303, 341, 345, 355T, 442 | 6 |
At least six hours from courses outside philosophy:
CRJS 215S, 222, 320, 462, FIN 331, HIST 453, 454, POLS 101S, 306, 402, 408, COMM 331, 333 (Students who elect to take a practicum can apply three hours of credit to this six-hour requirement.) | 6 |

Religious Studies Concentration (15 hours)
REL 313 Philosophy of Religion | 3 |
Nine hours from:
REL 311, 312, 350, 351, or 352 (at least three, but no more than six hours) | 9 |
PHIL 353, 354, 427, 480, 481, 482, or 485 (at least three, but no more than six hours) | 6 |
PHIL Elective (replaces Phil 340 in Departmental Requirements) | 3 |

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minors in Philosophy and Religious Studies

The requirements for minors in philosophy and religious studies are as follows:
1. Philosophy (General). Twelve hours in philosophy courses at the 300 and 400 level.
2. Philosophy-Applied Ethics. Twelve hours in philosophy courses as follows: PHIL 441 and nine hours from PHIL 301, 302, 303, 344T, 345, 355T, 410, 442.
3. Philosophy-Religious Studies. Twelve hours chosen from the following courses: REL 311, 312, 350, 351, 352, PHIL 313, 353, 354, 427, 480, 481, 482, and 485.
Political Science Major

Bachelor of Science and Bachelor of Arts—Political Science Major

Elizabeth Esinhart, Chief Departmental Advisor

<table>
<thead>
<tr>
<th>LOWER DIVISION GENERAL EDUCATION</th>
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<tbody>
<tr>
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<td>6</td>
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<td>Mathematics (BS requires C- or better in STAT 130M)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (BS students' competence must be at the 102 level. BA students must have competence through the 202 level and competence is not met by the associate degree.)</td>
<td>0-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POLITICAL SCIENCE AND GEOGRAPHY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Glen Sussman, Chair</td>
<td></td>
</tr>
</tbody>
</table>

The Department of Political Science and Geography offers undergraduate degrees in political science and geography.

In political science, the department offers Bachelor of Arts and Bachelor of Science degrees and a Bachelor of Arts degree in political science with teaching licensure in social sciences. The political science program is designed to give students an essential core of basic knowledge and analytical skills, while providing an opportunity to specialize in one of two emphasis areas: American politics and public law, or international relations and comparative politics. Licensure in social sciences education is also available.

In geography the department offers Bachelor of Arts and Bachelor of Science degrees and a Bachelor of Arts degree in geography with teaching licensure in social sciences. The geography program is designed to give students a broad base of geographical training and an understanding of human-environment interrelationships, while providing an opportunity to specialize in one of four emphasis areas: urban planning and emergency/hazards management, environment and resources, geographical information systems (B.S. only), and teaching. Undergraduate and graduate certificates in geographic information science and in spatial analysis of coastal environments are also offered.

In addition to improving students' writing skills, undergraduates in most 400-level courses in political science and geography are required to make oral presentations in class, or instructors strengthen students' verbal competency skills through in-class discussions. Students also gain technical skills in lower and upper-level methods classes where computers are employed for data analysis and social science research.

Undergraduate students may earn honors in the major in political science or geography by fulfilling all the requirements for the specific degree (B.A. and B.S.) and meeting the honors requirements indicated below. The requirements for honors do not increase the credit hours necessary for the major.

Bachelor of Science and Bachelor of Arts—Political Science Major

Elizabeth Esinhart, Chief Departmental Advisor

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<thead>
<tr>
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<tr>
<td>Foreign Language (BS students' competence must be at the 102 level. BA students must have competence through the 202 level and competence is not met by the associate degree.)</td>
<td>0-12</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Science 300-400 level electives (BA, 24 hrs; BS, 21 hrs)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 100S Introduction to International Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 101S Introduction to American Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 102 Introduction to Comparative Government &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS 308 Research Design (BS requires C- or better)</td>
<td>3</td>
</tr>
<tr>
<td>POLS 418 Quantitative Methods (BS only)</td>
<td>3</td>
</tr>
<tr>
<td>The foundation courses for teaching licensure in social sciences are POLS 100S or POLS 102, POLS 101S and POLS 308.</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Science 300-400 level electives (BA, 24 hrs; BS, 21 hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A. requires 24 hours with at least nine at the 400 level. B.S. requires 21 hours with at least nine at the 400 level. Both require a minimum of nine hours in each of two emphasis areas: American politics/public law and international relations/comparative politics. No more than three hours can be taken from POLS 367 or 368 and no more than three hours can be taken from POLS 497. One elective must be writing intensive. All majors must complete a capstone paper in the junior or senior year. POLS 300-400 electives</td>
</tr>
<tr>
<td>POLS 300-400 elective (BA only)</td>
</tr>
<tr>
<td>POLS 400 electives</td>
</tr>
</tbody>
</table>

See course listings in this Catalog for elective choices.

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major. (Satisfied by professional education core for social sciences teacher licensure.)

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Graduation requirements include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Licensure in Social Sciences Education

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS II or achieved State Board of Education-approved SAT scores. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education website or the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II Subject Matter Test Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.
Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major; with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 125 credit hours.

Major Requirements

Political Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation courses: POLS 100S or 102, 101S, and 308</td>
<td>9</td>
</tr>
<tr>
<td>POLS 301W, 327W or 338W</td>
<td>3</td>
</tr>
<tr>
<td>POLS 334 Electoral Politics</td>
<td>3</td>
</tr>
<tr>
<td>POLS Electives</td>
<td>3</td>
</tr>
<tr>
<td>Group 1: POLS 331, 335, 400, 407, 409, 410, 415 or appropriate topics courses (must select one)</td>
<td>3</td>
</tr>
<tr>
<td>Group 2: POLS 314, 316, 325W, 326, 327W, 328, 337, 338W, 468 or appropriate topics courses (must select one)</td>
<td>3</td>
</tr>
</tbody>
</table>

Geography

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 300, 320, or 350</td>
<td>3</td>
</tr>
<tr>
<td>GEOG electives: 305, 405W, 451, 452, 453, 454W, or 455</td>
<td>3</td>
</tr>
</tbody>
</table>

History

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 304T, 389T or a course chosen from Group 1 or Group 2 history electives below if a &quot;T&quot; course has already been taken</td>
<td>3</td>
</tr>
<tr>
<td>History Electives:</td>
<td>3</td>
</tr>
<tr>
<td>Group 1: HIST 305, 306, 307, 308, 310, 311, 313, 327 or appropriate topics courses</td>
<td>3</td>
</tr>
<tr>
<td>Group 2: HIST 346, 348, 351, 353, 354, 356, 361, 362, 363 or appropriate topics courses</td>
<td>3</td>
</tr>
<tr>
<td>History Elective: Group 1 or Group 2</td>
<td>3</td>
</tr>
</tbody>
</table>

Professional Education Core (meets upper-division General Education)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301 Social Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>ECI 304 Education Application of Computers (satisfies the computer skills requirement)</td>
<td>3</td>
</tr>
<tr>
<td>ECI 360 Classroom Management and Discipline</td>
<td>3</td>
</tr>
<tr>
<td>ECI 408 Reading and Writing in Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>ECI 455 Developing Instructional Strategies: Social Studies</td>
<td>4</td>
</tr>
<tr>
<td>ECI 485 Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>ESSE 406 Students with Diverse Learning Needs in General Ed Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 413 Fundamentals-Human Growth and Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Bachelor of Arts and Bachelor of Science—
Geography Major

Thomas Allen, Chief Departmental Advisor

LOWER DIVISION GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (Grade of C required in ENGL 110C and ENGL 111C, HIST 111C or PHIL 111C before declaring major)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (Satisfied in the major)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (BS students must earn C or better in STAT 130M)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-12</td>
</tr>
<tr>
<td>(BS students’ competence must be at the 102 level. BA students must have competence through the 202 level and competence is not met by the associate degree.)</td>
<td></td>
</tr>
<tr>
<td>Computer Skills (requires CS 101D or IT100D; GIS requires CS 149D; Teaching emphasis satisfies the requirement by ECI 304)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History (satisfied by HIST 102H and 104H in teaching licensure in social sciences)</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required. GEOL 111N-GEOL 112N or OCEN 106N-OCEN 107N are required. If different natural science sequence is selected, student must take one of those listed or OCEN 405 or 436.

Social Science (GEOG 100S and 101S cannot be used to satisfy this requirement; satisfied by POLS 100S, 101S, ANTR 110S, and ECON 200S, 201S or 202S in teaching licensure in social sciences) 6-12

Foundation courses (12-18 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 100S Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 101S Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 300 Maps and Geographic Info</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 308 Research Design (BS requires C- or better)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 418 Quantitative Methods (BS only, GEOG 402 and 404 may be substituted for GEOG 418)</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 400W, 405W, 410W, 422W, 454W OR 480W (satisfies Oral Communication)</td>
<td>3</td>
</tr>
</tbody>
</table>

The foundation courses for teaching licensure in social sciences are GEOG 100S, 101S, 308 and 405W or 454W.

 GEOGRAPHY 300-400 level electives (BA, 21 hours; BS, 18 hours)

At least nine credit hours must be taken at the 400 level. Those wishing to pursue a physical geography emphasis may substitute certain geological science courses (GEOG 330, 340, 344W, 408, 411, 442, 446, and 450) for up to 12 hours of geography credit. Three hours of internship count toward the 36 hours of geography courses. All majors must complete a capstone paper in the junior or senior year. An emphasis area must be selected to complete the degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 300-400 electives (BA only)</td>
<td>12</td>
</tr>
<tr>
<td>GEOG 300-400 electives (BS only)</td>
<td>9</td>
</tr>
<tr>
<td>GEOG 400-level electives</td>
<td>9</td>
</tr>
</tbody>
</table>

URBAN EMPHASIS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 310 Geography of the City</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 410W Seminar in Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 300-400 electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Choose two courses from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 301, 306T, 321, 368, 402, 411, or 412</td>
<td>6</td>
</tr>
</tbody>
</table>

ENVIRONMENT and RESOURCES EMPHASIS:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 305 World Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 405W International Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose two courses from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 306T, 321, 368, 401, 420, 422W, 451, 452, 453, 454W, 455 (BA students only, choose from approved study abroad options)</td>
<td>6</td>
</tr>
</tbody>
</table>

GEOGRAPHIC INFORMATION SYSTEMS EMPHASIS (BS ONLY)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 402</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 404</td>
<td>3</td>
</tr>
<tr>
<td>CS 149D (satisfies Computer Skills Lower Division General Education)</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose two courses from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 301, 419, 432, 490, GEOL 340, or CET 411 or 413</td>
<td>6</td>
</tr>
</tbody>
</table>

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major. (Satisfied by professional education core for social sciences teaching emphasis)

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

LICENSURE IN SOCIAL SCIENCES EDUCATION

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.
Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education Building 152. The PRAXIS II Social Studies Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 125 credit hours.

Major Requirements

Geography

Foundation Courses

- GEOG 100S or 101S
- GEOG 305
- GEOG 306T
- GEOG 401
- GEOG 421
- GEOG 425
- GEOG 436
- GEOG 437
- GEOG 442
- GEOG 445
- GEOG 461
- GEOG 462
- GEOG 466
- GEOG 480W
- GEOG 493
- GEOG 494
- GEOG 495
- GEOG 496

Political Science

POLS 325W, 326 or 331
POLS electives – select one from each group:
- Group 1 – POLS 331, 334, 335, 400, 407, 409, 410, 415, or appropriate topics course
- Group 2 – POLS 314, 316, 325W, 326, 327W, 328, 337, 338W, 466, or appropriate topics course

History

HIST 304T, 398T, or a course chosen from HIST electives if “T” course has already been taken
HIST Elective – select one from each group and one additional elective from either group:
- Group 1 – HIST 305, 306, 307, 308, 310, 311, 313, 327, or appropriate topics course
- Group 2 – HIST 346, 348, 351, 353, 354, 356, 361, 362, 363, or appropriate topics course

Professional Education Core:

- ECI 301 Social Cultural Foundations of Education
- ECI 304 Education Application of Computers (Satisfies the computer skills requirement)
- ECI 360 Classroom Management and Discipline
- ECI 408 Reading and Writing in Content Areas
- ECI 455 Developing Instructional Strategies: Social Studies
- ECI 485 Student Teaching
- ESSE 406 Students with Diverse Learning Needs in General Ed Classroom
- ESSE 413 Fundamentals-Human Growth and Development

Bachelor of Arts and Bachelor of Science with Honors–Political Science Major

The requirements are as follows:
1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.3.
3. Earn honors in nine hours of courses in the major at the 300/400 level, with no more than six hours taken from the same instructor.

Bachelor of Arts and Bachelor of Science with Honors–Geography Major

The requirements are as follows:
1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.3.
3. Earn honors in nine hours of courses in the major at the 300/400 level.

Minors in Political Science

One general minor and two minors in areas of specialization are offered in political science. Each requires a specified introductory course and 12 hours of 300/400-level courses. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

1. Political Science. Fifteen hours of political science to include POLS 100S, 101S or 102, and 12 hours of 300/400-level political science electives.
2. International Relations. Fifteen hours of political science to include POLS 100S Introduction to International Politics and twelve hours from the following: POLS 313, 314, 316, 320, 321W, 323, 324, 325W, 326, 327W, 328, 330, 332, 336, 337, 338W, 350T, 401, 421, 425, 426, 436, 437, 442, 445, 461, 462, 466, 480W, 493, 494 and other appropriate topics courses such as 495/496.
3. Public Law. Fifteen hours of political science to include POLS 101S and twelve hours from the following: POLS 301W, 306, 307, 403, 404, 408, 409, 417, 419, 421, and public law topics courses such as 495/496.

Minors in Geography

One general minor and two minors in areas of specialization are offered in geography. Each requires an introductory course and 12 hours of 300/400-level courses. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

1. Geography. Fifteen hours of geography to include GEOG 100S or 101S and 12 hours of 300/400-level geography electives.
2. Environment and Resources. GEOG 100S or 101S; GEOG 305 and 405W; and six hours from GEOG 306T, 401, 420, 422W.
3. Urban Planning. GEOG 100S or 101S; GEOG 310 and 411; and six hours from GEOG 321, 368, 402, 403, 410W, 412.

Advanced Placement

Students interested in advanced placement credit should confer with the department chair.

Certificate in Geographic Information Science (Undergraduate and Graduate)

The certificate in geographic information science (GISci) provides a program for students and professionals pursuing careers in geographic information systems (GIS) and related spatial technologies (remote sensing, global positioning systems, cartography, and spatial data handling and analysis). Rendered upon completion of the requirements, the certificate is an affidavit of academic proficiency and is administered by the Department of Political Science and Geography. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to undergraduates, graduate students, and non-degree-seeking professionals who meet the requirements. Students with comparable professional experience may be able to satisfy competencies in selected courses through examination.

Students seeking undergraduate certification must complete the 300- and 400-level courses (18 hours), and those seeking graduate certification must complete the 500-level courses (15 hours):

1. Core Courses:
- GEOG 300 Maps and Geographic Information or 301 Cartography (3 credits, undergraduate only)
- GEOG 402/502 Geographic Information Systems (3 credits)
- GEOG 404/504 Digital Techniques in Remote Sensing (3 credits)

2. Developmental Courses: Select nine credits from the following courses:
- GEOG 368 Internship in Geography
- GEOG 400W/500 Seminar in Geography
Certificate in Spatial Analysis of Coastal Environments (Undergraduate and Graduate)

The certificate in spatial analysis of coastal environments provides an interdisciplinary program for students wishing to pursue careers in coastal management or research, remote sensing, or geographic information systems (GIS) applications. Rendered upon completion of the requirements, the certificate is an academic affidavit comprised of courses in geography and oceanography and is administered by the two departments. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to postgraduate professionals who meet the requirements. Students with comparable professional experience may be able to show competence in selected courses through examination.

Students seeking undergraduate certification must complete the 400-level courses, and those seeking graduate certification must complete the 500-level courses:

1. **Core Courses:** GEOG 404/S04 and OCEN 414/S14 (six credits)
2. **Interpretive Analysis Courses:** Select two three-credit courses from the following: GEOG 402/502, OCEN 436/S36, GEOG 422W/S22, GEOG 480/S80, OCEN 495/S95, or GEOG 495/S95 (six credits)
3. **Capstone Seminar:** GEOG/OCEN 419/S19 (three credits)

**SOCIETY AND CRIMINAL JUSTICE**

Brian Payne, Chair
Ruth Triplett, Chief Department Advisor

The Department of Sociology and Criminal Justice offers courses in anthropology, criminal justice, sociology and social welfare. Students may earn a Bachelor of Arts or a Bachelor of Science with a major in sociology or criminal justice. The department also offers a Master of Arts in applied sociology with tracks in sociology, criminal justice, or women’s studies.

**Bachelor of Arts and Bachelor of Science—Sociology Major**

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>Mathematics (STAT 130M required)</td>
<td>3</td>
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<tr>
<td>Foreign Language (BS students’ competence must be at the 102 level; BA students must have competence through the 202 level and BA competency is not met by the associate degree)</td>
<td>0-12</td>
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<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

| Social Science (BA students complete 6; BS students complete 9) | 6-9 |

**Foundation courses required of all emphasis areas (12 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 201S Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 337 Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>SOC 409 Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOC 436 Capstone Research Project</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Majors must select one of the following emphasis areas:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Sociology Emphasis (300-400 level electives)</strong></td>
</tr>
<tr>
<td><strong>Group I</strong></td>
</tr>
<tr>
<td>SOC 309W, 403W, or 440W</td>
</tr>
<tr>
<td>SOC 300-400 electives (Up to six hours of internship course work may also be used.)</td>
</tr>
<tr>
<td>Students may not use any courses in Group II to satisfy these requirements.</td>
</tr>
<tr>
<td><strong>Group II</strong> (Select from this group only if 15 hours are selected from electives in Group I.)</td>
</tr>
<tr>
<td>Select two courses from SOC 310, 325, 402, 497; ANTR 300, 320</td>
</tr>
</tbody>
</table>

**Social Welfare Emphasis (24 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 310 Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOC 325 Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC 402 Child Welfare</td>
<td>3</td>
</tr>
<tr>
<td>Sociology Electives:</td>
<td></td>
</tr>
<tr>
<td>SOC 309W, 403W, or 440W</td>
<td>3</td>
</tr>
<tr>
<td>SOC 300-400 electives</td>
<td>12</td>
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</table>

(See course descriptions for choices)

**Anthropology Emphasis (24 hours)**

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<tbody>
<tr>
<td>ANTR 110S Introduction to Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTR 300-400 electives</td>
<td>12</td>
</tr>
<tr>
<td>SOC 309W, 403W, or 440W</td>
<td>3</td>
</tr>
<tr>
<td>SOC 300-400 electives</td>
<td>6</td>
</tr>
</tbody>
</table>

(See course descriptions for choices)

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Bachelor of Arts and Bachelor of Science—Criminal Justice Major**

Students are urged to take elective courses or to consider minoring in psychology, sociology, public administration, political science, computer science, information systems, or management.

Students interested in careers in corrections work including probation and parole are urged to take courses in the social welfare sequence (SOC 310, 325, 402) and/or minor in either sociology with a social welfare specialization or human services counseling.

Course requirements are as follows:

**LOWER DIVISION GENERAL EDUCATION**

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| Social Science (BA students complete 6; BS students complete 9) | 6-9 |

| Foundation courses required of all emphasis areas (12 hours) |  |

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<td>SOC 201S Intro to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 201S Intro to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>II. Social Science Perspective Course</td>
<td>3</td>
</tr>
</tbody>
</table>
Foundation courses (18 hours)
CRJS 215S Criminology 3
CRJS 222 Criminal Justice System 3
CRJS 262 Law and the Criminal Justice System 3
SOC 337 Research Methods 3
CRJS 426W Criminological Theory 3
CRJS 496 Capstone Research Project 3
Stratification Course 3
SOC 320 Social Inequality; SOC 340 Sociology of Women; SOC 402 Child Welfare; or SOC 426 Minority Groups

Upper Level Law Component 3
CRJS 320 Law and Social Control; CRJS 448 Sex, Discrimination & the Law; CRJS 462 Substantive Criminal Law; OR other approved course

Criminal Justice 300-400 level electives
Any 300-400 level criminal justice course may satisfy the elective requirements. Up to six hours of internship course work may also be used.
CRJS 300-400 electives 18

Law and Society Concentration
Criminal justice majors may select the law and society concentration. This concentration is designed for students majoring in criminal justice who are considering law school and want to receive a formally recognized course of legal studies within criminal justice. Criminal justice majors selecting a legal studies concentration must take their foundation courses (CRJS 215S, 222, 262, 426W, 436 and SOC 337), a stratification course, 15 hours of 300/400 level legally-themed courses (CRJS 320, 415, 416, 418, 448, and 462 or other courses as approved by the department chair), and six hours of 300/400 level criminal justice electives.

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)
Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minors in Sociology and Criminal Justice
Requirements for minors in sociology and criminal justice are as follows:
1. Sociology: SOC 201S, and either 320, 337, or 409 and nine hours of 300/400 level sociology courses (excluding SOC 367, 368, 377, 378). A maximum of one topics course (SOC 395/396 or 495/496) may be included. If SOC 337 is used to satisfy another requirement, it cannot be used for the minor.
2. Sociology (Social Welfare Specialization): SOC 201S, 310, 325, 402, and one other 300/400-level SOC course.
5. Criminal Justice (Law and Society Specialization): CRJS 215S, 262, nine hours from CRJS 320, 395 (as appropriate), 415, 416, 418, 448, 462, and one 300/400-level criminal justice elective (3 hours), excluding CRJS 367 and 368.
For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor through courses offered by Old Dominion University.

Advanced Placement
Students interested in credit by examination should consult with the department chair.

Master of Arts–Applied Sociology
Randy Gainey, Graduate Program Director
The Master of Arts degree in applied sociology is offered jointly by the Department of Sociology, Norfolk State University, and the Department of Sociology and Criminal Justice, Old Dominion University. The M.A. degree may serve as professional training for students seeking employment in federal, state and local government agencies or in private-sector organizations. In addition, the M.A. program provides excellent training in the fundamentals of sociology for students who wish to pursue a Ph.D. in the social sciences.

The program provides students with training in theory and methods, as well as opportunities to participate in three areas of specialization: general sociology, criminal justice, and women’s studies.

Admission
Students must hold a bachelor's degree with at least a 3.00 average on a 4.00 scale and have completed at least 12 hours of undergraduate work in sociology or criminal justice, including courses in theory, research methods, and statistics. The Graduate Record Examination is required for all applicants.

Those who fail to meet one or more of the above requirements may be admitted as provisional students by the graduate program committee, which is composed of three faculty members from Old Dominion University and three faculty members from Norfolk State University.

Old Dominion University is the institution of formal record for this program.

Requirements
All students must complete 30 hours of course work including five required core courses (15 credit hours) in approximately the following order: SOC 610, 620, 630, 640, and 650. Each student must complete a thesis (six credit hours), which will be supervised by a faculty committee including members from both institutions.

Sociology Track
In addition to the requirements listed above, students choosing the sociology track must complete 15 credit hours of electives chosen from graduate sociology courses offered by the Department of Sociology and Criminal Justice, Old Dominion University, and the Department of Sociology, Norfolk State University. Selection of elective courses will be based upon individual advising.

Criminal Justice Track
In addition to the requirements listed above, students choosing the criminal justice track must complete CRJS 625 and 12 credit hours of electives chosen from graduate criminal justice courses offered by the Department of Sociology and Criminal Justice, Old Dominion University, and the Department of Sociology, Norfolk State University. Selection of elective courses will be based upon individual advising. Students will be awarded a certificate in criminal justice upon completion of the Master of Arts degree.

Women’s Studies Track
In addition to the requirements listed above, students choosing the women’s studies track must complete WMST 560 and 570 and nine credit hours of electives chosen from selected graduate women’s studies courses. No more than six hours of these credits can be taken in any one discipline (sociology and criminal justice are considered two separate disciplines). Selection of elective courses will be based upon individual advising. Students will be awarded a certificate in women’s studies upon completion of the Master of Arts degree.

WOMEN’S STUDIES

(757) 683-3823
http://www.edu.edu/al/womens_studies/Main_Page/index.html
Anita Clair Fellman, Chair and Chief Departmental Advisor

Women’s studies is a multi- and interdisciplinary field of study encompassing all aspects, historical and contemporary, of women’s nature, lives, and perspectives. The Women’s Studies Department offers the Bachelor of Arts and Bachelor of Science degrees with a major in women’s studies. Old Dominion University is the only state-assisted university in Virginia to offer this major. A minor and a graduate certificate are also available, as is an accelerated program allowing exceptional students to earn both a B.A. or B.S. in women's studies and an M.A. in humanities in five years.
The women's studies undergraduate major and minor and graduate certificate may increase a student's career opportunities in governmental and non-governmental agencies, law, criminal justice, public relations, journalism, counseling, the health professions, business, social welfare, the military, and many other fields; they can also prepare students for new and exciting research opportunities in graduate and doctoral programs.

Bachelor of Arts or Bachelor of Science—
Women's Studies Major

LOWER DIVISION GENERAL EDUCATION

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<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>Social Science (WMST 201S cannot be used to satisfy this requirement)</td>
<td>6</td>
</tr>
</tbody>
</table>

Bachelor of Arts-Departmental Requirements

WMST 201S Women in a Changing World or 302W All Am.
- Women: A Multicultural Approach | 3
- HIST 363 (or approved HIST) | 3
- WMST 390T Women and Technology Worldwide | 3
- WMST 401W Women: A Global Perspective | 3
- WMST 460W Feminist Thought | 3
- ENGL 463 Women Writers | 3
- ENGL 477 Language, Gender and Power | 3
- WMST 490 Capstone Course | 3

Choose 9 credits from
- WMST 368, 377, 395/495, 450W, 470, 497, 498 or courses cross-listed with WMST.

Bachelor of Science—Departmental Requirements

WMST 201S Women in a Changing World or 302W All Am.
- Women: A Multicultural Approach | 3
- HIST 363 (or approved HIST) | 3
- WMST 390T Women and Technology Worldwide | 3
- WMST 401W Women: A Global Perspective | 3
- WMST 460W Feminist Thought | 3
- WMST 470 Women's Ways of Knowing/Ways of Knowing Women | 3
- ENGL 477 Language, Gender and Power | 3
- WMST 490 Capstone Course | 3

Choose 9 credits from
- WMST 368, 377, 395/495, 450W, 497, 498 or courses cross-listed with WMST.

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Option 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment. Students must receive at least a C in WMST 201S, 302W and 460W. In order to track their intellectual growth, each woman's studies major is expected to maintain a portfolio of papers and assignments submitted for their WMST and WMST cross-listed courses.

Women's Studies as a Second Major

Students who find themselves especially interested in women's studies but who already have a major may fulfill their upper-division general education requirements by selecting women's studies as a second major. Such students must complete the same departmental requirements as those majoring solely in women's studies, but may count up to three women's studies cross-listed courses taken for their other major toward their women's studies major as well. For instance, a student majoring in both sociology and women's studies may apply three courses, such as SOC 340, 343, and 427, taken toward their sociology requirements, as the three electives for their major in women's studies.

Minor in Women's Studies

Students may complete a minor in women’s studies by filing an application and taking 15 hours as follows:

1. Nine hours: WMST 302W plus two of the following courses: WMST 390T, (also applicable toward the three-credit natural science and technology requirement), 401W, 460W.
2. Six hours: two other WMST courses, e.g., WMST 368, 450W, 470, and/or courses cross-listed with women’s studies in the Schedule of Classes from disciplines such as history, philosophy, communication, English, criminal justice, foreign languages, sociology, psychology, political science, art, etc.

Students must maintain a grade point average of 2.00 in the 15 credit hours taken and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of the undergraduate women's studies minor will fulfill the upper-division General Education requirements.

Advising

To declare a women's studies major or minor, students must see an advisor in the Women's Studies Department. All women's studies majors are required to have a conference with their advisor before each semester (preferably during preregistration).

Graduate Work in Women’s Studies

Graduate students desiring to obtain a certificate in women's studies have several options:

1. A 15-credit-hour graduate women's studies certificate is offered through the Institute of Humanities. Students who are pursuing a graduate degree in humanities may do almost all their work in the field of women's studies or they may combine women's studies with emphases in other liberal arts disciplines.
2. Students who want only the graduate certificate without a graduate degree may attain it, but must apply, nonetheless, for graduate standing in the Institute of Humanities.
3. Graduate students may earn a women's studies certificate in addition to a graduate degree in another department or college. Students who have already earned or are pursuing graduate degrees in other fields may enhance their qualifications with a women's studies certificate. Those admitted to a graduate program and obtaining a master's degree in fields such as English, history, psychology, international studies or applied sociology have the option of obtaining that degree with the women's studies certificate. For more information consult the chair of women's studies and see the relevant sections of the Catalog.

Students must maintain a 3.00 GPA in the 15 graduate credits needed for the women's studies certificate. The certificate is awarded upon the completion of the following program of course work:

1. WMST 560 and 570
2. At least nine additional credits in 500- or 600-level courses approved for the women's studies curriculum and drawn from various disciplines (such as women's studies, English, history, political science and geography, foreign languages, sociology, criminal justice, etc.) No more than six of these credits may be taken in any one field, except women's studies.

3. At least one of the courses chosen must be at the 600 level. Students seeking an M.A. who wish to teach women's studies at a post-secondary level in Virginia should take 18 rather than 15 graduate credits in approved women's studies courses in order to meet accreditation requirements.

Accelerated Master of Arts in Humanities—Women's Studies

By allowing exceptional women's studies majors to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for students with a demonstrated record of academic excellence to earn both a B.A. or B.S. in women's studies and an M.A. in humanities with a concentration in women's studies in five years. For more information consult the Humanities section of this Catalog.
College of Business and Public Administration

Web site: www.odu.edu/business

Nancy Bagranoff, Dean
Ali Ardalan, Associate Dean

Department Chairs:
Douglas E. Ziegenfuss Accounting
Mohammed Najand Business Administration
Vinod Agarwal Economics
William Crouch Information Technology and Decision Sciences
William Leavitt Urban Studies and Public Administration
Barry R. Hendricks Military Science and Leadership

Center and Institute Directors:
Ali Ardalan The Bureau of Research
K.C. Chung Center for Asian Business
Martha Hofler Center for Economic Education
Sheila M. Powell Executive Development Center
James V. Koch Regional Studies Institute
Timothy McKee Graduate Center for Tax Education
Andre Liebenberg Insurance and Financial Services Center
Wayne Talley The International Maritime, Ports, and Logistics Management Institute
John Lombard Real Estate and Economic Development Center

Old Dominion University's College of Business and Public Administration has as its principal objective the preparation of liberally educated specialists who will enter the challenging world of business and public administration. All programs in the college are designed to promote the following: professional competence; facility in the communication arts; analytical skills; leadership abilities; an understanding of social, political, and economic forces; and a strong sense of business ethics and public purpose. This foundation enables graduates of these programs to advance in a broad range of careers in the public and private sectors.

The College of Business and Public Administration is one of approximately 467 schools in the world to have achieved accreditation on the graduate and undergraduate levels by the Association for Advancing Collegiate Schools of Business (AASCB) - International. The undergraduate and graduate accounting programs have received their own accreditation through the same agency. In addition, the Master of Public Administration program is one of approximately 200 graduate programs certified to meet the standards of the National Association of Schools of Public Affairs and Administration (NASPAA).

Undergraduate students may pursue majors and special emphases in accounting, business administration, e-commerce systems, economics, financial management, information systems, international business, management, and marketing management. The college also offers graduate programs in accounting, business administration, e-commerce systems, economics, public administration, taxation, and urban studies. Also, the college offers a joint master's degree in computer information science with the Computer Science Department. Information about the graduate programs is available in the Graduate School of Business and Public Administration section of this Catalog.

Also housed within the college is the Department of Military Science and Leadership. The mission of this department is to provide professional instruction and leadership development for selected students who desire to serve in the active or reserve components of the U.S. Army. Additional information about this program may be obtained through the Military Science and Leadership Department.

Mission

Vision Statement

The vision of the College of Business and Public Administration is to be recognized as an innovative leader in business and public administration education and to become a valued center of excellence in the mid-Atlantic coast region.

Mission Statement

The mission within this vision is to produce graduates who have the theoretical and applied knowledge to meet the challenges posed by a dynamic domestic and global business environment. To achieve the college's vision and mission, the faculty and dean will continually pursue:

- Programs that are on the frontiers of knowledge in commerce, international business, and issues related to urban and regional development.
- An educational process that promotes ethical behavior in business.
- Curricula that focus on those skills necessary for career development and lifelong learning.
- Partnerships that will integrate practical experience into the curriculum and promote interaction with the external community.
- Close communication, trust, and commitments between the college and external communities to foster cooperation in achieving mutual goals.

Business and Public Administration Affiliates

The college has several external units which enhance and support the academic programs. These units, listed below, offer opportunities for faculty members and students to interact with representatives of business, industry and government in Eastern Virginia.

The Bureau of Research. The bureau serves as the affiliated research arm of the College of Business and Public Administration, providing faculty and graduate students with opportunities to gain research experience through special projects and continuing programs and as an administrative and research agency through which the college can relate to the community in the areas of business, economics, and public administration.

Center for Asian Business. The Center for Asian Business has been established to enhance the college’s capacity to teach and conduct research on the subjects related to Asian business practices. The center collects and disseminates information on Asian businesses, supports course offerings on Asian management, and publishes research monographs and articles on the subject. Also, the center provides managerial training and consulting services for Asian companies and executives.

The Center for Economic Education. The center is an integral part of the national effort dedicated to improving economic literacy and promoting a greater understanding of the free enterprise system. A nonpartisan, nonprofit organization, the center is an affiliate of the Virginia Council on Economic Education and the National Council on Economic Education. The center works cooperatively with school systems promoting increased effectiveness of economics instruction in grades K-12 through workshops, credit classes and consultations.

Executive Development Center. The center’s mission is to provide businesses, organizations, and individuals with high quality professional development and continuing education programs in virtually all areas of business, management, and executive education. The center offers public programs for individuals seeking professional certificate programs, preparation for certification exams, career advancement and career change. In addition, the center develops and delivers custom training programs and consulting services to meet specific organizational and employee development needs of businesses and organizations regionally, nationally and internationally.

Regional Studies Institute. The primary objectives of the institute are to conduct research and develop a knowledge base on regional issues in the Eastern Virginia area. In addition, it provides a forum for regional collaboration involving educational, business, and government organizations.

The Graduate Center for Tax Education. The center is responsible for the administration of the Master of Taxation program within the aegis of the Department of Accounting. The center also provides for active research on practical tax issues facing businesses, individuals, and estates and trusts. In addition, the center, in conjunction with the Executive Development Center, supports professional tax education programs for CPAs, attorneys, bank trust officers, financial planners, and other interested professionals.

Insurance and Financial Services Center. The Insurance and Financial Services Center supports undergraduate and graduate curricula in the disciplines of professional financial planning and risk and insurance. In addition, it provides for active involvement with the Eastern Virginia financial services community as a placement, research, consultative, and resource agency. The center further supports educational programs and seminars for the profession including a professional development program.
for practitioners that leads to the designation of Professional Financial Planner (PFP).

The International Maritime, Ports and Logistics Management Institute. The institute provides a focal point for educational services and research programming which is responsive to the port-related needs of Hampton Roads, Virginia, and other port-related facilities in the world. The institute serves as a positive link with the port-related business and public administration communities and provides a catalyst for the delivery of education, training, research, and service programs in both the credit and non-credit arenas. Courses are available at the graduate level and are listed in the Courses of Instruction section of this catalog. Professional, executive-level seminars, workshops, and short courses will also be offered.

Real Estate and Economic Development Center. The mission of the center is to provide information and resources for the Hampton Roads real estate and economic development communities in their quest to improve the regional economy through job creation and investment. The center fosters relationships with the development community by hosting topical seminars on key development issues affecting the region and works closely with all related professional service organizations. The center maintains a comprehensive collection of information including detailed demographic and real estate data and employs the latest in geographic information and mapping software. The center publishes annual real estate market reviews on the office, industrial, retail, single family and multi-family real estate markets and sponsors the Hampton Roads Real Estate Market Review and Forecast.

Distance Education

The college offers several degrees on TELETECHNET (the University's distance learning network) to various locations in the state of Virginia and beyond. Usually students complete their general education program in a community college and transfer to Old Dominion University to complete the degree requirements. Bachelor of Science degrees in accounting, finance, information systems and technology, management, and marketing are available on this network. A minor in management is also available. The graduate programs offered on TELETECHNET are discussed in the graduate school section of this Catalog.

Bachelor of Arts—Economics Major

Vinod Agarwal, Chair
Eric Anderson, Chief Departmental Advisor

Economics is the study of how societies use their limited resources to produce wealth and how the distribution of the wealth among their members is determined. Knowledge of economics helps businesses and households understand how economic events will affect them, how they can best react to these events, and how to assess government economic policies. Majoring in economics is a springboard to a very wide variety of careers in business, government agencies, and not-for-profit organizations. A major in economics is also excellent preparation for law school and graduate study toward master's and doctoral degrees in economics, business administration, public administration, urban studies, international studies, marine affairs, and other fields.

Admission to the Bachelor of Arts—Economics Major

General Requirements

Applicants for admission to the Bachelor of Arts—Economics Major program should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the program without first being admitted to the University. Admission to the University does not guarantee admission to the program. Candidates for admission to the program should indicate on the application to the University their intention to enter the Bachelor of Arts—Economics Major program.

Transfer students may complete Bachelor of Arts—Economics Major foundation courses (ENGL 110C, MATH 162M, ECON 201S, and ECON 202S) at another accredited college or university, but are responsible for having the Admissions Office determine that the courses are acceptable to the University. All transfer students must have a transfer student evaluation completed by the Admissions Office to be used as documentation that the transfer courses are acceptable.

All candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Normally, a student should apply in the sophomore year. Students will be notified in writing by the Department of the admission decision.

Before regular admission to the program can be granted, a student must have completed the Bachelor of Arts—Economics Major foundation courses (ECON 201S, ECON 202S, ENGL 110C and MATH 162M) with a grade of C or better in each.

Students who have utilized the Adjusted Resident Credit (ARC) option will be treated as transfer students with only those foundation courses with a grade of C or better included in the admission policy. Students may utilize the Grade Forgiveness Policy for foundation courses.

Enrollment in 300/400-Level Economics Courses

Only students who have been admitted to the Bachelor of Arts—Economics Major program will be eligible to enroll in 300/400-level Economics courses, with the following exceptions:

1. Students who have been admitted to the undergraduate business degree (Bachelor of Science in Business Administration) program (see section to follow). This exception applies to all of the majors in the undergraduate business degree program, not just to the Bachelor of Science in Business Administration—Economics Major.

2. Students pursuing a declared minor in Economics.

3. Students pursuing Upper-Division General Education Requirement Option B (clusters) may enroll in 300/400-level Economics courses included in clusters. Currently these are ECON 447 (Cluster 4), ECON 454W (Cluster 5), and ECON 445 (Cluster 9).

4. Students pursuing degree programs outside the College of Business and Public Administration that require or permit 300/400-level Economics courses to complete the degree may enroll in the courses appropriate to their programs.

Upper-Level Economics Course Enrollment Waiver

Students with extenuating circumstances may petition the Chief Departmental Advisor of the Economics Department in writing for a waiver to the ban on enrollment in 300/400-level Economics courses without admission to the Bachelor of Arts—Economics Major program or one of the exceptions listed in the previous section. Waivers will be considered under the following conditions:

1. The waiver can be granted only once, for one semester.

2. The student must have previously completed 42 credit hours.

3. During the semester for which the waiver is granted, the student must enroll in all remaining Bachelor of Arts—Economics Major foundation courses whose successful completion with a grade of C or better would allow normal admission to the program, or must enroll in all remaining business foundation courses whose successful completion would allow normal admission to the Bachelor of Science in Business Administration degree program.

Appeal Procedures for Denial of Admission to the Bachelor of Arts—Economics Major Program

Students who do not achieve a C or better in the foundation courses after utilizing the Grade Forgiveness Policy may pursue a two-step appeal process:

1. Students may appeal in writing to the Chief Departmental Advisor of the Economics Department documenting the reasons why the student should be admitted to the program. The Chief Departmental Advisor will review the student's other course work to determine if the student has met the requirements for admission to the program. The Chief Departmental Advisor may waive the Grade Forgiveness Policy if the student is denied admission after the appeal to the Chief Departmental Advisor.

2. If the student is denied admission after the appeal to the Chief Departmental Advisor, the student may appeal in writing to the Chair of the Department of Economics for a review of the admission decision.

Freshman I

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
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<td>MATH 162M</td>
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<td>Computer Literacy Requirement</td>
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<td>COMM 101R</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION 119
Double Major in Economics and Another Discipline

A student declaring economics as his or her second major, and whose first major is a nonbusiness discipline, need not take ENGL 111C, COMM 101R, and intermediate foreign language courses, unless these courses are required for the other major/degree. The student must satisfy all written communication, oral communication, and foreign language requirements of the first major/degree.

Bachelor of Arts with Honors–Economics Major

Requirements: The candidate must designate, with the approval of the Economics Department's undergraduate advisor and the relevant instructors, two upper-level economics courses that he or she intends to take on an Honors basis. In these courses, the student must complete extra, honors-quality work in addition to regular course requirements, and must earn a grade of B or better in each of the two courses. The student must also earn a grade point average of 3.5 or higher in all economics courses.

B.A./M.B.A Five-Year Program

This program allows qualified students to earn a B.A. (major in economics) followed by an M.B.A., in a total time of as little as five years, taking normal semester course loads. The entrance requirements, admissions procedure, and required courses are as described in the College of Arts and Letters section of this Catalog, except that students majoring in economics need not take ECON 604 (one of the M.B.A. business core courses).

Minor in Economics

A minor in economics requires the completion of 12 hours of 300- and/or 400-level courses. The 12 hours may include either ECON 301 or ECON 304 but not both. All courses at the 300 and 400 levels must be preceded by listed prerequisites. For completion of this minor, a student must have a minimum overall cumulative grade point average of 2.00 in all economics courses and complete a minimum of six hours of upper-level courses in the minor through courses offered by Old Dominion University.

Bachelor of Science in Business Administration

The Undergraduate Advising Office (CBPA Futures) serves as the welcoming center for new undergraduate students to the college. All freshmen, new transfer students, or those changing majors are advised into the appropriate curricula within the college by individual appointment with a Futures counselor. Additionally, Futures serves all CBPA students as a satellite of the Career Management Center, assisting students with internships and job placement. The CBPA Student Mentors are also available to undergraduates for support and information.

Judy White, Director, Undergraduate Advising

Admission to the Undergraduate Program in Business Administration

General Requirements

Applicants for admission to the undergraduate program in business administration should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into business administration without first being admitted to the University. Admission to the University does not guarantee admission to the undergraduate business administration program. Candidates for admission to the undergraduate business administration program should indicate on the application to the University their intention to enter the undergraduate business administration program.

Transfer students may complete business foundation courses (ACCT 201, ECON 202S, ENGL 110C and MATH 162M) at another accredited college or university, but are responsible for having the Admissions Office determine that the courses are acceptable to the University. All transfer students must have a transfer student evaluation completed by the Admissions Office to be used as documentation that the transfer courses are acceptable.
All candidates for admission to the undergraduate business administration program should contact the College of Business and Public Administration directly for an application to the undergraduate business administration program (757-683-5777). Normally, a student should apply in the sophomore year. Students will be notified in writing by the College of Business and Public Administration of their admissions decision.

Before regular admission to the undergraduate business administration program can be granted, a student must have completed the business foundation courses, ACCT 201, ECON 202S, ENGL 110C and MATH 162M, with a grade of C or better in each.

Students who have utilized the Adjusted Resident Credit (ARC) option will be treated as transfer students with only those business foundation courses with a grade of C or better included in the admissions policy. Students may utilize the Grade Forgiveness Policy for business foundation courses.

**Enrollment in 300/400 Level Business Courses**

Only students who have been admitted to the undergraduate business administration program of the College of Business and Public Administration will be eligible to enroll in 300/400 level business courses with the following exceptions:

1. Students pursuing a declared minor in the College of Business and Public Administration may enroll in 300/400 level business courses appropriate to the minor.
2. Students pursuing Upper-Division General Education Requirement Option B, Clusters, may enroll in 300/400 level business courses included in the clusters. (Currently this includes MGMT 325, MGMT 350, MKTG 414 (Cluster 1), ECON 447 (Cluster 4), ECON 454W (Cluster 5), OPMT 303T (Cluster 7), ECON 445 (Cluster 9), and IT 425W, MGMT 361, MKTG 411 (Cluster 10).
3. Students pursuing the Lower-Division General Education Technology Perspective may enroll in IT 360T or OPMT 303T. (Selections in the Computer Skills area include IT courses not the 300/400 level.)
4. Students pursuing a degree program outside the College of Business and Public Administration that requires 300/400 level business courses to complete the degree may enroll in the courses appropriate to the major.

**Upper-Level Business Course Enrollment Waiver**

Students with extenuating circumstances may petition the department chair or discipline coordinator in writing for a waiver to the ban on enrollment in 300/400 level business courses without admission to the undergraduate business administration program. Waivers will be considered under the following conditions:

1. The waiver can be granted only once, for one semester.
2. The student must have previously completed 42 credit hours.
3. During the semester for which the waiver is granted, the student must enroll in all remaining business foundation courses whose successful completion with a grade of C or better would allow normal admission to the College.

**Appeal Procedures for Denial of Admission to the Undergraduate Business Administration Program**

Students who do not achieve a C or better in the business foundation courses after utilizing the Grade Forgiveness Policy may pursue a two-step appeal process.

1. Students may appeal in writing to CBPA FUTURES documenting the reasons why the student should be admitted to the College of Business and Public Administration. CBPA FUTURES will review the student's other course work to determine if the student has maintained a 2.50 grade point average on a 4.00 scale in at least 25 semester hours or 42 quarter hours from Old Dominion University or an accredited institution of higher education. In this case, the C policy in the business foundation courses may be waived.
2. If the student is denied admission after the appeal to CBPA FUTURES, the student may appeal in writing to the Undergraduate Admissions Committee for a review of the admission decision.

**Requirements**

Students in all of the Bachelor of Science in Business Administration degree programs must fulfill the University General Education requirements (including foreign language) as well as the College of Business and Public Administration’s core, major, and elective requirements. Students must choose at least one major area to meet requirements towards the degree. The major areas are: accounting, decision sciences, economics, finance, international business, information systems, management, and marketing. Students majoring in international business must take the specific cluster courses that have been designated for their specific region.

To stay in compliance with AACSB accreditation standards, students receiving a Bachelor of Science in Business Administration from Old Dominion University must complete at least half of their business course work in residence with a minimum of four courses in the major. This equates to 10 business classes, thus meeting the University’s residency requirement as well.

Majors in the college may not take business and public administration courses for pass/fail credit except those courses in which pass/fail is the only grading option (i.e., internships and practica). No more than four hours of activity credit (used as free electives) may be applied to degree requirements for students majoring within the college.

**General Education – New Portal to Appreciating our Global Environment**

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer then 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

All majors in the College of Business and Public Administration (except the B.A. in economics) may substitute GEN 101 for a course in one of the following perspectives: fine and performing arts, history, literature, or philosophy. Students pursuing the Bachelor of Arts in economics may substitute GEN 101 for a course in the fine and performing arts, history, literature, philosophy, or social science perspective areas. Students should consult their advisors for additional information.

**Competency in Oral and Written Communication**

Competency in oral communication is demonstrated by the completion of COMM 101R, Public Speaking. Additionally, all students majoring in business administration can expect to complete several courses in which individual and/or group oral presentations will be required. The written competency is demonstrated by successful completion of ENGL 111C–English Composition.

**Upper-Level Writing Intensive Requirement**

The upper-level writing intensive requirement in the business administration major is met with MGMT 485W.

**Computer Literacy and Technology General Education Requirements**

The computer literacy General Education requirement is also a requirement within the College of Business and Public Administration. All business students (except accounting) fulfill this requirement within the major by completing a series of required courses already in the degree program. Accounting majors must complete one course chosen from the approved General Education computer literacy list to fulfill this departmental requirement. The technology general education requirement is satisfied within each B.S.B.A. degree by OPMT 303T.

**Minor in Business Administration**

A minor in business administration is available to students not receiving the Bachelor of Science in Business Administration degree. Requirements for the minor are ACCT 201, ECON 202S, and five of the following courses: ECON 201S, FIN 323, MGMT 325, MKTG 311, IT 360T and OPMT 303T. To receive a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Advanced Placement**

The college accepts advanced placement credit in accordance with the rules and regulations outlined in the Academic Information section of this catalog. Students may take College-Level Examination Program (CLEP) tests to receive credit for ACCT 201, 202, FIN 331, MGMT 325, or MKTG 311. Students are advised to contact the Testing Center and the Office of...
of Experiential Learning for more information regarding CLEP and other experiential learning credit options. For advanced placement credit in any of the following courses in order to satisfy requirements found in the first two years of the B.S.B.A. degree: COMM 101R, ENGL 111C, MATH 162M, 200, ACCT 201, 202, ECON 201S, 202S, DSCI 206, and computer literacy (accounting majors only). Some majors within the college have additional computer course requirements which are not required of most associate degree programs. Please see the major course requirements for more information. The University's lower-division General Education requirements are deemed satisfied by the A.S. degree. Associate degree holders, although meeting lower-level General Education requirements, must ensure that 120 credits are completed to earn the B.S.B.A. degree.

The College of Business and Public Administration does not accept courses completed at the freshman and sophomore levels at other institutions for required courses at the junior and senior level at Old Dominion University. Please see the section on CLEP credits (Experiential Learning Credit Options at the Undergraduate Level) for additional information.

Honors Program in Business Administration

The Honors Program in Business Administration is designed to provide an enriched undergraduate program in business administration that will enable the college to serve highly qualified students more effectively and to increase their visibility in the business community. The normal admissions requirement is an overall grade point average of 3.40 at the end of the sophomore year of course work, either at Old Dominion University or from a transfer institution. Students with lower averages, but who display the potential to meet the program requirements, may be admitted at the discretion of the program director.

Honors program participants are required to complete the capstone course, MGMT 487W Honors: Business Strategy and Policy, and at least four of the following upper-division honors courses: DSCI 387, ECON 387, FIN 387, FIN 388, MGMT 387, MKTG 387, and OPMT 387T. See course descriptions for specific information.

To receive Honors in business administration, honors program participants must graduate with at least a 3.40 grade point average overall and a 3.20 grade point average in the eight core courses for which there are honors sections, with no grade lower than C in those courses.

To apply for the Honors in Business Administration program, contact either the Director of the CBPA Honors Program or the Director of Undergraduate Advising.

Grade Average Requirements for Graduation

To graduate with a Bachelor of Science in Business Administration degree, students must present a minimum of 120 hours with a minimum overall grade point average of 2.00 in all courses taken at Old Dominion University. Students must also attain a minimum overall grade point average of 2.00 in courses taken toward the major (courses included in the major grade point average calculation are listed following the description of each major's course work).

Additionally, students must attain a minimum overall grade point average of 2.00 in the "Common Body of Knowledge" (CBK) listed below. Only courses completed at Old Dominion University will be used to compute the CBK average. Students who are not required to take IT 360T (ACCT and IT majors and minors) will compute the CBK average using the remaining courses. If the CBK average is below the required 2.00 minimum, students are advised to utilize the Grade Forgiveness Policy to improve the grade point average.

Requirements for Completing a Bachelor of Science in Business Administration

The following sections show the courses that are requirements for all business students, regardless of the chosen major: Lower-Division General Education, Common Body of Knowledge Courses, and Upper-Division General Education. Credit hours are listed after the course title. The student must also choose a major and complete the requirements listed for that major on the following pages.

FOUNDATION COURSES FOR ADMISSION TO THE COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>ENGL 110C</td>
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<tr>
<td>MATH 162M</td>
<td>Pre-calculus</td>
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<tr>
<td>ACCT 201</td>
<td>Principles of Acct I</td>
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<tr>
<td>ECON 202S</td>
<td>Microeconomics</td>
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See the section on Admission to the Undergraduate Program in Business Administration, General Requirements.

LOWER-DIVISION GENERAL EDUCATION ***

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<tr>
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<td>ENGL 110C</td>
<td>English Composition</td>
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<tr>
<td>ENGL 111C</td>
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<td>Fine Arts Perspective</td>
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<td>History Perspective *</td>
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<tr>
<td>Literature Perspective</td>
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<tr>
<td>Natural Science Perspective I &amp; II</td>
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<tr>
<td>Philosophy Perspective</td>
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<td>3</td>
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<tr>
<td>MATH 162M</td>
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<td>MATH 200</td>
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<tr>
<td>Foreign Language** 6</td>
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</table>

* There is a pre-determined history course for students majoring in International Business. Please see the International Business major course work for clarification.

** There are several ways to satisfy the foreign language requirement. Please see the Catalog section labeled Requirements for Undergraduate Degrees, Lower-Division Requirements, Foreign Languages for clarification.

*** Transfer students with an applicable Associate degree from a Virginia Community College or another community college that has a seamless transfer agreement with ODU must have a grade of C or better in COMM 101R, ENGL 111C, MATH 162M and MATH 200 to be able to transfer them.

COMMON BODY OF KNOWLEDGE COURSES*  

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>DSCI 206</td>
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<td>DSCI 306</td>
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<td>ECON 301</td>
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<tr>
<td>FIN 323</td>
<td>Introduction to Finance</td>
<td>3</td>
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<tr>
<td>FIN 331</td>
<td>Legal Environ of Busn</td>
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<tr>
<td>IT 360T**</td>
<td>Principles of Info Tech</td>
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<td>MGMT 325</td>
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<tr>
<td>MGMT 485W</td>
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<td>MKTG 311</td>
<td>Principles of Marketing</td>
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</tr>
<tr>
<td>OPMT 303T</td>
<td>Operations Mgmt Tech</td>
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</table>

* Transfer students from a Virginia Community College or an acceptable community college with an applicable Associate degree: ACCT 201, 202, ECON 201S, 202S and DSCI 206 are not automatically waived. A grade of C or better must be earned to transfer these courses to Old Dominion University.

** Students completing a major in Accounting or Information Technology do not take this course. Decision Sciences majors choose one of three course options—see Decision Sciences major course work for more information.
**UPPER-DIVISION GENERAL EDUCATION**

**Option A:** Any University-approved minor, second degree, or second major.*

**Option B:** Choose a cluster and complete nine hours as described in the University Catalog section labeled Requirements for Undergraduate Degrees, Upper-Division Requirements.**

* Students who pursue a minor-major outside the College of Business and Public Administration or in Economics fulfill Option A with no additional course work needed. Bachelor of Science in Business Administration majors pursuing a minor or second major in the College of Business and Public Administration must also take six hours of 200-400 level courses outside the CBPA, or in economics, or in study abroad. Students majoring in economics who pursue a minor or second major in the College of Business and Public Administration fulfill the upper-division general education requirement and do not need to take the six hours of 200-400 level courses outside the CBPA.

**All International Business majors take a cluster as specified within the major requirements. Please see the International Business major course work for further details.

The following sections denote undergraduate course requirements for specific majors offered by the College of Business and Public Administration. Most majors have free electives and business electives, which are also listed. Credit hours are listed after the course title.

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**Bachelor of Science in Business Administration - Accounting Major**

Douglas E. Ziegenfuss, Chair  
Terry Kubichan, Undergraduate Advisor

Most people are users of accounting information in their business, professional and personal lives. A significant number of graduates use accounting to prepare for a more general career in business. The study of accounting provides a basis for many business and entrepreneurial activities. The undergraduate program in accounting at Old Dominion University is part of a select group in the country with separate accreditation from AACSB-International. The program provides a broad-based education with a wide variety of career objectives. In addition to providing technical accounting and auditing knowledge, communications and computer skills are emphasized while developing the student's analytical abilities.

**Accounting major course work**

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<tr>
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<th>Credits</th>
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<td>Computer Literacy Perspective</td>
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<td>BUSN 135 Intro to Prod Software</td>
<td>1</td>
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<tr>
<td>ACCT 301 Intermediate Acct</td>
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<tr>
<td>ACCT 302 Intermediate Acct II</td>
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<tr>
<td>ACCT 311 Managerial Acct</td>
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<tr>
<td>ACCT 317 Acct Systems</td>
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<td>ACCT 411 Financial Auditing</td>
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<td>ACCT 421 Taxation</td>
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<tr>
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<td>6</td>
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</tbody>
</table>

* ACCT electives: 367, 368, 369, 405, 422, 450. ACCT 450 cannot also be used as an international business elective.

**International Business electives:** ACCT 450, ECON 450, FIN 435, MGMT 361, 462, 463, MKTG 411, IT 425W, or OPMT 434.

***Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: all 300-400 level ACCT courses.

**Accounting minor course work**

A minor in accounting requires the completion of ACCT 201-202, 301 and nine hours of 300- and/or 400-level accounting courses. All courses at the 300 and 400 levels must be preceded by listed prerequisites. To receive a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all 300- and/or 400-level courses completed and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

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**Bachelor of Science in Business Administration - Decision Sciences Major**

Carol Markowski, Discipline Coordinator and Undergraduate Advisor

Decision Sciences enables students to properly use decision models and computers to manipulate data and make appropriate information available for decision making and information systems with courses in a chosen functional area of business.

**Decision Sciences major course work**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BUSN 135 Intro to Prod Software</td>
<td>1</td>
</tr>
<tr>
<td>IT 360T, 361, or ACCT 317</td>
<td>3</td>
</tr>
<tr>
<td>DSCI 407 Mgmt Science</td>
<td>3</td>
</tr>
<tr>
<td>DSCI 476 Sim Model &amp; Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DSCI electives*</td>
<td>9</td>
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<tr>
<td>Functional area electives**</td>
<td>9</td>
</tr>
<tr>
<td>Free electives</td>
<td>6</td>
</tr>
<tr>
<td>200-400 level business elective***</td>
<td>3</td>
</tr>
<tr>
<td>300-400 level business elective***</td>
<td>3</td>
</tr>
</tbody>
</table>

* DSCI electives: six hours from IT 210, 410, DSCI 441 or OPMT 432; three hours from ACCT 311, DSCI 368, 441, ECON 400, FIN 413, 431, IT 210, 410, 461, MGMT 413, MKTG 407, OPMT 432

** Student must choose and complete course work from the following functional areas:

- ACCT: ACCT 450 and two approved 300-400 level ACCT courses
- ECON: ECON 450 and two approved 300-400 level ECON courses
- FIN: FIN 435 and two approved 300-400 level FIN courses
- MGMT: MGMT 361 or 462 and two approved 300-400 level MGMT courses
- MKTG: MKTG 411 and two approved 300-400 level MKTG courses
- OPMT: OPMT 434 and two approved 300-400 level OPMT courses

*** Can be any 200-400 or 300-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: DSCI 407, 476, nine hours of Decision Sciences electives, and nine hours of Functional area electives.

**Decision Sciences minor course work**

The minor in Decision Sciences is comprised of DSCI 306, OPMT 303T (core business courses), DSCI 407 and DSCI 476. At least two of these courses must be completed through courses offered by Old Dominion University, and a 2.00 overall grade point average is required. Business majors who want to make themselves more marketable may choose a minor in Decision Sciences by taking two additional courses.

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**Bachelor of Science in Business Administration - Economics Major**

Vinod Agarwal, Chair  
Eric Anderson, Chief Departmental Advisor

Economics is the study of how societies use their limited resources to produce wealth and how the distribution of the wealth among their members is determined. Knowledge of economics helps businesses and households understand how economic events will affect them, how they can best react to those events, and how to assess government economic policies. Majoring in economics is a springboard to a wide variety of careers in business, government agencies, and not-for-profit organizations. A major in economics is also excellent preparation for law school and graduate study towards master's and doctoral programs in economics, business administration, public administration, urban studies, international studies, marine affairs, and other fields.
Economics major course work
Social Science Perspective 3
BUSN 135 Intro to Prod Software 1
ECON 304 Intermed Microecon 3
ECON 305 Intermed Macroecon 3
ECON 450 International Econ 3
ECON electives* 9
Free elective 3
200-400 level free elective 3
Business elective ** 3
300-400 level business elective *** 6
* ECON electives: 331, 368, 369, 395/396, 400, 402, 407, 421, 425, 427, 444, 445, 457, 452, 454, 455, 456, 495, 499
**/*** Can be any 100-400 level or 300-400 level course offered by the College of Business and Public Administration or transfer courses of a business nature providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: All ECON courses except ECON 201S, 202S, and 301.

Economics minor course work
A minor in economics requires the completion of 12 hours of 300- and/or 400-level courses. The 12 hours may include either ECON 301 or ECON 304 but not both. All courses at the 300 and 400 levels must be preceded by listed prerequisites. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all economics courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

A minor in economics will fulfill the Upper-Division General Education requirements for all B.S.B.A. majors.

Bachelor of Science in Business Administration-Finance Major
Mohammed Najand, Chair & Discipline Coordinator
John Griffith, Chief Discipline Advisor

The financial management major comprises three tracks: finance, real estate and financial services. All satisfy the requirements listed below under one of the tracks. Finance graduates are qualified for corporate financial management positions such as financial analysts, capital budgeting managers, credit managers, or cash control and risk managers; portfolio positions like securities analysts, account executives, or portfolio manager/analysts; bank management positions include lending officers, marketing officers, or financial analysts. The 12 hours may include either ECON 301 or ECON 304 but not both. All courses at the 300 and 400 levels must be preceded by listed prerequisites. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all economics courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

A minor in economics will fulfill the Upper-Division General Education requirements for all B.S.B.A. majors.

Finance major course work
BUSN 135 Intro to Prod Software 1
FIN 317 or 319 Prin Ins Risk Mgmt or Real Estate 3
FIN 435 Intl Financial Mgmt 3
FIN 431 Investments 3
FIN 432 Intermed Fin Mgmt 3
FIN 439 Financial Dec Making 3
FIN electives* 9
Free electives 6
200-400 level business elective** 3
300-400 level business elective*** 3
* FIN electives: three hours from FIN 433, 434, ACCT 301 or 311. Six hours from FIN 317 or 319, 340, 367, 368, 369, 410, 411, 413, 433, 434, 450, 453, 454, 458, 497, ECON 421, 455, 450, ACCT 301, 311
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: FIN 317 or 319, 435, 431, 432, 439, and nine hours of FIN electives.

Finance major, Real Estate Estate track course work
BUSN 135 Intro to Prod Software 1
ECON 445 Urban Economics 3
FIN 319 Prin of Real Estate 3
FIN 431 Investments 3
FIN 435 Intl Financial Mgmt 3
FIN 450 Real Estate Finance 3
FIN 451 Real Estate Appraisal 3
FIN 454 Real Est Invest Analysis 3
FIN elective* 3
Free electives 6
200-400 level business elective** 3
300-400 level business elective** 3
* FIN electives: FIN 332, 367, 368, 369, 434, 453, 498
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: FIN 319, 431, 435, 450, 451, 454, ECON 445, and three hours of FIN electives.

Finance major, Insurance and Financial Services track course work
BUSN 135 Intro to Prod Software 1
FIN 317 Principles of Insurance 3
FIN 435 Intl Financial Mgmt 3
FIN 413 Risk Analysis 3
FIN 443 Seminar in Insurance 3
FIN electives* 12
Free electives 6
300-400 level business elective** 3
* FIN electives: 12 hours from FIN 367, 368, 369, 410, 411, 412, 430, 431, 434, ACCT 421
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: FIN 317, 431, 435, 443, and 12 hours of FIN electives.

Financial Management, Real Estate, and Insurance and Financial Services minor course work
A minor in financial management requires the completion of FIN 323, 431, 432, and six hours from FIN 433, 434, 435, and 439. A minor in real estate requires the completion of FIN 319, 450, 454, and six hours from FIN 451, 453, 455, and 458. A minor in insurance and financial services requires the completion of FIN 317, 431, 443, and six hours from FIN 340, 410, 411, 412, and 431.

For completion of a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all finance courses required or allowed toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Bachelor of Science in Business Administration-Information Systems and Technology Major
William H. Crouch, Chair
Roya Ardalan, Chief Departmental Advisor

The information systems and technology major is designed to provide students with a technical background in computer-based information technology as well as a broad perspective of the business environment in which information technology plays a strategic role. The department emphasizes the development of business analysis and system implementation skills; these skills can provide a basis for job entry, career development and flexibility amid the rapid changes in information technology and information systems. The major consists of four distinct tracks.

Information Systems and Technology major courses
IT 201 Intro to Info Systems 3
IT 210 Busn Apps with C++ 3
IT 317 Principles of Tech Arch 3
IT 310  GUI Program with C++  3
IT 361  Systems Analysis  3
IT 473  IT Design, Dev, & Impl  3
IT 415  Busn Telecomm & Net  3
IT 450  Database Concepts  3
IT 464  Project Management  3
IT elective*  3
Software elective**  3
International business elective***  3
200-400 level business elective****  3
300-400 level business electives***  3
* IT electives: 367, 368, 369, 410, 412, 416, 417, 419, 420, 425W, 430, 451, 452, 453, 454, 461, 465, 495, 497. IT 425W cannot be used as both the IT major elective and as the INBU elective.
** Software electives: IT 372, 410, 420, 430, 461
*** International Business electives: IT 425W, ACCT 450, ECON 450, FIN 435, MGMT 361, 462, 463, MKTG 411, OPMT 434
**** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: IT 201, 210, 310, 317, 361, 415, 450, 464, 473 and the IT elective.

Information Systems and Technology major, Database track course work
IT 201  Intro to Info Systems  3
IT 210  Busn Apps with C++  3
IT 317  Principles of Tech Arch  3
IT 310  GUI Program with C++  3
IT 361  Systems Analysis  3
IT 473  IT Design, Dev, & Impl  3
IT 415  Busn Telecomm & Net  3
IT 450  Database Concepts  3
IT 451  Database Admin  3
IT 452  Database Backup  3
IT 453  Database Deployment  3
Software elective*  3
200-400 level business elective**  3
International business elective***  3
* Software electives: IT 372, 410, 420, 430, 461
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
*** International Business electives: IT 425W, ACCT 450, ECON 450, FIN 435, MGMT 361, 462, 463, MKTG 411, OPMT 434

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: IT 201, 210, 310, 317, 361, 415, 450, 461, 473, DSCI 441, MKTG 450, and the e-commerce elective.

Information Systems and Technology minor course work
Students must complete IT 201, 210, 310, 317, 361, 415, 450, 461, 473, DSCI 441, MKTG 450, and the e-commerce elective.

Bachelor of Science in Business Administration-
International Business Major
Bruce Seifert, Discipline Coordinator
A major in international business permits students to take an interdisciplinary approach to the study of global business. In addition to the core business and university requirements, all international business majors take specialized international courses in economics, finance, management and marketing.

Students also select an appropriate region: Europe, Latin America or East Asia. Unless they are already fluent in both English and another language, students will study and obtain a high level of competency in a foreign language appropriate for the region of interest. Students fluent in English and another language may fulfill the language requirement with an approved minor (see discipline coordinator for information). Students must also study the culture and history of the specific region.

All students majoring in international business are expected to participate in an approved study abroad program. International students are exempt from the study abroad requirement. However, these students are required to take an approved minor. Exemptions need written approval of the discipline coordinator. Students can choose from an extensive list of sites abroad. International business students have recently studied in Denmark, England, Mexico, Philippines and Korea.

International business students are encouraged to minor in a business functional area such as accounting, finance, marketing or management.

International Business major, East Asian emphasis in Chinese course work
HIST 101H  Asia in World History  3
POLLS 100S  International Politics  3

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: IT 201, 210, 310, 317, 361, 415, 416, 417, 418, 450, 473 and the software elective.

Information Systems and Technology major, E-Commerce track course work
IT 201  Intro to Info Systems  3
IT 210  Busn Apps with C++  3
IT 317  Principles of Tech Arch  3
IT 310  GUI Program with C++  3
IT 361  Systems Analysis  3
IT 473  Syst Design & Impl  3
IT 415  Busn Telecomm & Net  3
IT 450  Database Concepts  3
IT 461  Implemt Internet Apps  3
DSCI 441  Electronic Supply Chain  3
MKTG 450  Marketing on Internet  3
E-Commerce elective*  3
200-400 level business elective**  3
International business elective***  3
* E-Commerce electives: ECON 456, FIN 333, 456, IT 417, 430, 464, MGMT 480
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
*** International Business electives: IT 425W, ACCT 450, ECON 450, FIN 435, MGMT 361, 462, 463, MKTG 411, OPMT 434
BUSN 135  Intro to Prod Software 
CHIN 111F  Intro to Chinese I 
CHIN 212  Intro to Chinese II 
ECON 450  International Economics 
FIN 435  International Finance 
MKTG 411  Multi-national Mkgt 
INBU 433  Doing Business in Asia 
INBU 450  Intl Business Operations 
INBU elective* 3
200-400 level business elective** 3
International Asia Cluster*** 6

* International Business electives: ECON 454, 455, INBU 367, 368, 434, 463, 495, MGMT 462, 463, 465, OPMT 434
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
*** Asian Cluster choices: ASIA 460, GEOG 453, HIST 332, 336, 439, POLS 338, 437

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: INBU 433, 450, ECON 450, FIN 435, MKTG 411, and the three-hour INBU elective.

International Business Major, East Asian emphasis in Japanese course work
HIST 101H  Asia in World History 
POLS 100S  International Politics 
BUSN 135  Intro to Prod Software 
JAPN 111F  Beginning Japanese 
JAPN 212  Intermediate Japanese 
ECON 450  International Economics 
FIN 435  International Finance 
MKTG 411  Multi-national Mkgt 
INBU 433  Doing Business in Asia 
INBU 450  Intl Business Operations 
INBU elective* 3
200-400 level business elective** 3
International Asia Cluster*** 6

* International Business electives: ECON 454, 455, INBU 367, 368, 434, 463, 495, MGMT 462, 463, 465, OPMT 434
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
*** Asian Cluster choices: ASIA 460, GEOG 453, HIST 332, 336, 439, POLS 338, 437

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: INBU 433, 450, ECON 450, FIN 435, MKTG 411, and the three-hour INBU elective.

International Business Major, European emphasis course work
HIST 102H  Europe in World History 
POLS 100S  International Politics 
BUSN 135  Intro to Prod Software 
FL 201  See comments below* 
FL 202  See comments below*
GER/FR/SPAN 366 Busn Language 
ECON 450  International Economics 
FIN 435  International Finance 
MKTG 411  Multi-national Mkgt 
INBU 431  Doing Busn in Europe 
INBU 450  Intl Business Operations 
INBU elective** 3
200-400 level business elective*** 3
300-400 level business elective*** 3
International European Cluster**** 6

* Language choices include: French, Spanish, German
** International Business electives: ECON 454, 455, INBU 367, 368, 434, 463, 495, MGMT 462, 463, 465, OPMT 434
*** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
**** European Cluster choices: GEOG 451, FLET 410, HIST 316, 406, POLS 314, 332

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: INBU 431, 450, ECON 450, FIN 435, MKTG 411, and the three-hour INBU elective.

International Business Major, Latin America emphasis course work
HIST 103H  Latin America History 
POLS 100S  International Politics 
BUSN 135  Intro to Prod Software 
SPAN 201  Intermediate Spanish I 
SPAN 202  Intermediate Spanish II 
SPAN 366  Business Language 
ECON 450  International Economics 
FIN 435  International Finance 
MKTG 411  Multi-national Mkgt 
INBU 432  Doing Busn in Latin Am 
INBU 450  Intl Business Operations 
INBU elective* 3
200-400 level business elective** 3
300-400 level business elective** 3
International Latin Cluster*** 6

* International Business electives: ECON 454, 455, INBU 367, 368, 434, 463, 495, MGMT 462, 463, 465, OPMT 434
** Can be any 200-400 level course offered by the College of Business and Public Administration, providing that the student has the appropriate prerequisites
*** Latin Cluster choices: MGMT 462, 463, 465, OPMT 434

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: INBU 367, 450, ECON 450, FIN 435, MKTG 411, and the three-hour INBU elective.

International Business minor course work
Students seeking the Bachelor of Science in Business Administration may also minor in international business by completing the following courses: ECON 450, FIN 435, MKTG 411, and either INBU 431, 432, 433, 450, MGMT 462, or 463. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor through courses offered by Old Dominion University.

Bachelor of Science in Business Administration-
Management Major

Paul J. Champagne, Discipline Coordinator

The management major is designed to develop a student’s understanding of management as both an art and as a science along with those administrative skills necessary for positions of leadership and responsibility. The program recognizes that most students and managers will face several career changes and job choices following the first decade following graduation. The major provides students with a background in the principles and practices of management that will allow them to function in a variety of organizational environments.

For a major in management, all courses must be preceded by listed prerequisites. For completion of a major in management, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the major. In addition, a grade of C- or better is required in all upper-level courses in the major must be taken through courses offered by Old Dominion University.

Management major course work
BUSN 135  Intro to Prod Software 
MGMT 340  Human Resource Mgmt 
MGMT 361  Intl Busn Operations 
MGMT 451  Organizational Behavior 

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: all 300-400 level MGMT courses except MGMT 325 and 485W.

Management minor course work
A minor in management requires the completion of MGMT 325 plus 12 hours of 300- or 400 level management courses except for MGMT 485W. All
courses selected must be preceded by listed prerequisites. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor. In addition, a grade of C- or better is required in all management courses counted toward the minor. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

**Bachelor of Science in Business Administration—Marketing Major**

Anusorn Singhapakdi, Discipline Coordinator  
Kiran Karande, Chief Discipline Advisor

Marketing is more than just buying and selling. Marketing is part of almost any transaction which occurs between people and organizations. Each party has objectives and goals it would like to realize. The marketing task is to facilitate the transaction so that these objectives are met. The principal objective of this major is educating students to be ethical and successful in today’s and tomorrow’s dynamic marketing environment and systems.

For completion of a major in marketing, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the major. In addition, a grade of C- or better is required in all marketing courses counted toward the major.

**Marketing major course work**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
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<td>Intro to Prod Software</td>
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</tr>
<tr>
<td>MKTG 402</td>
<td>Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 407</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 411</td>
<td>Multi-national Mkgt</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 490</td>
<td>Mkgt Policy &amp; Strategy</td>
<td>3</td>
</tr>
<tr>
<td>MKTG electives*</td>
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</tr>
<tr>
<td>200-400 level free elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Free electives</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

* Marketing electives: MKTG 367, 368, 369, 403, 404, 406, 412, 414, 416, 428, 450, 496

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: all 300-400 level MKTG courses except MKTG 311.

**Marketing minor course work**

A minor in marketing requires the completion of MKTG 311 plus 12 hours of 400-level marketing courses. All courses selected must be preceded by listed prerequisites. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor. In addition, a grade of C- or better is required in all marketing courses counted toward the minor. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

**Bachelor of Science – E-Commerce Systems**

The Bachelor of Science in e-commerce systems has been deactivated. No new students are being accepted. Please contact the Department of Information Technology and Decision Sciences for additional information.

**MILITARY SCIENCE AND LEADERSHIP (Army Reserve Officers’ Training Corps)**

Barry R. Hendricks, Chair

The Department of Military Science and Leadership offers courses which develop a student’s ability to organize, motivate, and lead others. Although some military science graduates choose a career with the U.S. Army, many use their Army leadership and management experiences as a springboard for successful careers as entrepreneurs, corporate officers and managers, attorneys, and governmental executives. A variety of social and professional enrichment activities as well as adventure training opportunities are also available to students. Scholarships are available on a competitive basis.

The Army ROTC program is administratively located under the Director of Military Activities and is situated, for academic matters, within the College of Business and Public Administration.

**Mission**

The mission of the Department of Military Science and Leadership is to commission the future officer leadership of the U.S. Army. The Old Dominion University Army ROTC program consists of structured study in the field of military science with the primary objective of developing leaders who will serve as commissioned officers in the U.S. Army Active and Reserve components. Students develop maturity, responsibility, and dependability while earning the Gold Bar of an Army Second Lieutenant.

**Requirements**

Army ROTC offers two different programs to all qualified university students. The traditional four-year program gives students the opportunity to take AROTC courses in each of their four years of college. The two-year program is available for any students who did not take ROTC during their first two years of college. There is no service obligation until students reach their junior year of college.

**Four-Year Program**

**Basic Course.** Military Science Level I (MILS 101+, 102+ or 195, 196) and Level II (MILS 201+, 202+ or 295, 296, 250+).

**Advanced Course.** Military Science Level II (MILS 301, 395/311+, 302, 396/312+) and Level IV (MILS 401, 495/411+, 402, 496/412+).

Veterans and members of the Reserve or National Guard may be able to waive the Basic Course requirements.

**Two-Year Program**

MILS 250 (Basic Camp) and the Advanced Course listed above. Attendance at Leadership Training Course (not to be confused with the Basic Training) satisfies the Basic Course requirements.

**Minor in Military Leadership**

The minor in military leadership is a high quality, interdisciplinary, multidimensional, experiential, and culturally diverse program that exposes students to, and prepares them for, real life leadership opportunities and challenges. Students explore issues of leadership, citizenship, and social change within the context of an inquiry, experiential, and competency-based instructional design. The minor is open to all students who have completed the prerequisite courses. Students who are not enrolled in the military science or naval science program will receive academic credit for the minor but will not receive credit for commissioning purposes.

The requirements for students in the Military Science and Leadership Department are completion of MILS 301, 302, 401, 402 and one course selected from ENMA 301, 401, ENGL 435W, HIST 408, 410, MGMT 325, 340, NURS 480W, PHIL 441, 442, POLS 326, 327, 421, PSYC 343, 345, and SOC 352. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Scholarships**

Students may compete for four-, three-, and two-year scholarships which pay full tuition, gradually increasing stipend and $600 book allowance annually.

**Summer Training**

Students may compete for Airborne, Air Assault, and other training during the summer. Third-year ROTC students may compete for Cadet Troop Leadership slots to various locations in the United States and overseas. All Advanced Course cadets attend the National Advance Leadership course before or after their senior year.

**GRADUATE SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION**

Nancy Baganoff, Dean  
Ali Ardalan, Associate Dean

**Graduate Program Directors:**  
Vinod Agarwal M.A. Economics Program
Bruce Rubin, M.B.A. Program
William Leavitt, M.P.A. Program
Leonard Ruchelman, M.U.S. Program
Otto Martinson, M.S. Accounting Program
William Crouch, M.S. Computer Science, Computer Information Science Option
Douglas Ziegenvonfuss, Master of Taxation Program
Kae Chung, Ph.D. Business Administration Program
Berhanu Mengistu, Ph.D. Urban Services-Management Concentration Program

The Master School of Business and Public Administration offers nine degree programs: Master of Arts in economics; Master of Business Administration; Master of Public Administration; Master of Science in accounting; Master of Science in e-commerce systems; Master of Taxation; Master of Urban Studies; Ph.D. in Business Administration—finance, management, or marketing tracks; and Ph.D. in Urban Services—management concentration. In addition, the school offers a master's in computer information science option jointly with the Computer Science Department.

Graduate courses are taught during the day and in the evening facilitating flexible combinations of formal learning and full- or part-time employment. The M.B.A. and a certificate program are offered through TELETECHNET (the University's distance learning program) during the weekend. Students come from a variety of backgrounds with undergraduate degrees from many different colleges and universities.

All graduate students are advised to check specific program requirements before enrolling in 400/500 level courses. Nondegree graduate students must satisfy the admission index for graduate study or receive special permission from the graduate program director in the College of Business and Public Administration in order to enroll for graduate credit.

Master of Arts—Economics

Vinod Agarwal, Graduate Program Director

The Master of Arts with a major in economics is a flexible degree that can meet a wide range of student needs. The program allows students to pursue a traditional approach as preparation for entry into a doctoral program or an applied approach geared toward policy analysis in a specialized area.

Students who have chosen to continue their graduate training have successfully completed Ph.D. programs at universities across the nation. Other graduates have become economics teachers, primarily at the community-college level. Some have gone to research and analysis positions in governmental agencies and private business firms. Finally, still others have chosen to pursue careers in general business management.

All students in the program are trained in theory and research methods and take several courses emphasizing business or government policy analysis in chosen specialty areas. An independent research program is required, permitting students to apply theory and empirical techniques to real-world problems.

The Department of Economics also encourages interdisciplinary training. The master's program can be adapted for students desiring a diverse background by combining economics with graduate courses in sociology, political science, computer science, statistics, finance, marketing research, or public administration.

Admission

In addition to the University's graduate admission requirements, applicants seeking regular admission must have at least a 3.00 grade point average in their major. In addition, applicants are required to take either the aptitude section of the Graduate Record Examination or Graduate Management Admission Test, and they must submit at least one letter of recommendation. If the undergraduate grade point average falls below that required for regular status, applicants may qualify for provisional admission.

Requirements

Undergraduate prerequisites include principles of economics, calculus (three hours), statistics (six hours), intermediate microeconomics, and intermediate macroeconomics with grades of at least B.

Thirty semester hours of approved graduate work are required for the award of the Master of Arts degree in economics. A maximum of six hours of 500-level courses approved for graduate credit may be applied toward the degree. The remaining 24 hours of credit must be taken from 600- and/or 700-level courses. Up to six hours of electives (approved by the graduate program director) may be taken from courses outside the Department of Economics. Required economics courses for the graduate program are ECON 625, 701, 703, and 706. Writing skills commensurate with the level of this degree are also a requirement for graduation from this program.

Near the completion of formal course work, candidates conduct independent research projects with thesis or nonthesis options. Students who choose the thesis option should register for ECON 698 in the final semester. Six hours of credit are given for this course. The thesis is guided and approved by the committee of at least three members of the department. Detailed instructions, requirements, and deadlines are contained in the guide for Preparation of Theses and Dissertations, available from the Office of the University Registrar.

Students who choose the nonthesis option register for ECON 698 in the last semester of course work. Three hours of credit are given for the research-paper option. Nonthesis students conduct independent research projects under the guidance of a department faculty member. Prior to taking ECON 698, students must register for ECON 697, a reading course under the supervision of a faculty member, for three credits. All master's candidates must pass written comprehensive examinations covering microeconomics, macroeconomics, econometrics I, and one area selected by the student.

Master of Business Administration

Bruce Rubin, Graduate Program Director
Rhyanne Henley, Program Manager

The Master of Business Administration (M.B.A.) program at Old Dominion University is designed to present broad but thorough insights into issues relevant to all effective managers. In an ever changing and increasingly global environment, these skills are applicable to both the private and public sectors. The Old Dominion University M.B.A. program is structured to provide students with the opportunity to design a program of study to meet their individual needs.

The program provides students with a great deal of flexibility to select courses of interest. Some may choose a program with a twelve-hour concentration plus six hours of electives, while others may elect not to concentrate and develop a general M.B.A. program with eighteen hours of general electives. Concentrations are available in each of the following areas: Management Accounting, Finance, Information Systems, International Business, Management, Decision Sciences, Maritime and Ports Management, Marketing, Public Administration, Assurance Services, and Business and Economic Forecasting.

Additional flexibility is provided by the requirement that each student select three one-hour electives from a wide series of choices. Among the topics included are: effective business writing, business plan development, leadership, business ethics, mediation, and employment law. Each student will also have to select an advanced course in international business in a discipline of his or her choice.

Students have the opportunity to interact with the business community on projects with faculty supervision. These experiences are available through such courses as Applied Entrepreneurial Projects and International Marketing Projects. In addition, students may participate in internships.

The program leading to the degree of Master of Business Administration is designed for the student whose undergraduate preparation is in nonbusiness areas as well as for students with undergraduate training in business and is open to any qualified holder of a bachelor's degree, regardless of the undergraduate field of study.

The program is designed to accommodate both full-time and part-time students with the courses offered during the day as well as in the evening at four locations—the main campus in Norfolk, the Virginia Beach Higher Education Center, the Peninsula Higher Education Center in Hampton, and the Northern Virginia Higher Education Center in Sterling. Case studies, lectures, and independent research projects are the major components of an integrated approach to the study of business management, and the M.B.A. program at Old Dominion University is fully accredited by the AACSB - International.

Requirements

College-level calculus is required of all applicants. Students admitted without calculus will have provisional status until the completion of MATH 200 (Calculus for Business & Economics) which must be taken during the first semester of course work.

All students will be required to take an international course, either as part of their concentration or as the general elective.
Program of Study

Core 
ACCT 601 Accounting for Managers 3 
DSCI 600 Statistics 3 
ECON 604 Managerial Econ and International Trade 3 
FIN 605 Financial Management 3 
MGMT 602 Organizational Management 3 
MKTG 603 Marketing Management 3

18

Required beyond the Core: 
ECON 612 Global and Applied Macroeconomics 3 
IT 610 Information Systems for Managers 3 
OPMT 611 Operations Management with Quantitative Analysis 3

9

Electives: 
General Electives 15 
Series of One-Hour Modules 3

18

Capstone: 
MGMT 750 Business Policy & Strategy 3

Total Program 48

A concentration consists of, not more or less than, 12 hours of course work beyond the core. For those areas which offer a concentration and also have a "required beyond the core" course, the required course will be counted as part of the concentration. For example, if students choose to concentrate in IT, the concentration would consist of the "required beyond the core" course (IT 610) plus nine additional hours. These students will have an additional three hours of electives.

M.B.A. Concentrations

Management Accounting Concentration
ACCT 623 Operational Auditing
ACCT 626 Corporate Financial Reporting: A Global Perspective
ACCT 627 Operational Cost Control
ACCT 630 Financial Statement Analysis and Evaluation
ACCT 637 Seminar in Management Accounting
ACCT 727 Strategic Costing and Consulting
ACCT 668 Internship or ACCT 693 Selected Topics in Accounting

Finance Concentration
FIN 636 Financial Markets and Institutions
FIN 735 Portfolio Analysis
FIN 737 International Financial Management
FIN 739 Management of Financial Institutions
FIN 740 Options and Futures Markets
FIN 741 Corporation Financial Policy
FIN 668 Internship or FIN 697 Selected Topics in Finance

Information Systems Concentration
IT 610 Introduction to Computer-Based Information Systems
Nine Credit Hours from:
IT 512 Knowledge-Based Systems.
IT 520 Object Oriented Programming with C++
IT 525 Information Systems for International Business
IT 530 Object Oriented Programming with JAVA
IT 550 Data Base Concepts
IT 573 Systems Design and Implementation
IT 645 Groupware and GDSS
IT 647 IS Training and Human Resource Development
IT 649 Information System and Network Security
IT 660 Advanced Computer-Based Information Systems

International Business Concentration
ACCT 626 Corporate Financial Reporting: A Global Perspective
ECON 654 Economic Development
ECON 752 International Trade
ECON 753 International Finance
FIN 737 International Financial Management
MGMT 721 Strategic Management for Multinational Enterprises
MKTG 633 International Marketing Management
3 credit hours may be chosen from the following list:
ECON 654 Economic Development
MKTG 633 International Marketing Management

Electives: 
General Electives 15
Series of One-Hour Modules 3

Management Concentration
MGMT 513 Compensation Management
MGMT 552 Organization Development
MGMT 618 Issues in Human Resource Management
MGMT 630 Motivation and Incentives
MGMT 631 Organizational Power and Politics
MGMT 633 Corporate Social Responsibility and Performance
MGMT 634 Contemporary Employment Issues & Conflicts
MGMT 721 Strategic Management for Multinational Enterprises
MGMT 745 (PADM 745) Managing Development and Change in Public Organizations
MGMT 668 Management Internship or MGMT 695 Selected Topics in Management

Decision Sciences Concentration
OPMT 611 Operations Management with Quantitative Analysis
Nine credit hours from:
DSCI 507 Advanced Management Science
DSCI 576 Simulation Modeling and Analysis for Business Systems
DSCI 641 Electronic Supply Chain Management
DSCI 711 Regression and Multivariate Analysis for Business
DSCI 712 Advanced Statistical Models in Business Research
OPMT 532 Forecasting, Inventory and Quality Management Systems
OPMT 624 Managing Services

Maritime and Ports Management Concentration
PORT 611 International Maritime Transport
PORT 612 Port Operations and Management
PORT 613 International Maritime and Admiralty Law
PORT 614 Port Planning and Economics
ECON 502 Transportation Economics
ENMA 613 Logistics and Supply Chain Management

Marketing Concentration
MKTG 621 Managerial Problems in Marketing
MKTG 623 Sales Management
MKTG 624 Buyer Behavior
MKTG 625 Marketing Research Methods and Analysis
MKTG 628 Marketing of Services
MKTG 630 Ethics and Marketing Decision-Making
MKTG 640 Global Marketing Management
MKTG 650 Marketing on the Internet
MKTG 633 International Trade Field Study or MKTG 668 Marketing Internship or MKTG 669 Selected Topics

Public Administration Concentration
PADM 603 The Environment of Public Administration
PADM 651 Introduction to Public Administration
PADM 695 Advanced Topics
PADM 711 Urban Services Administration
PADM 730 Theories of Conflict Resolution and Problem Solving
PADM 734 Negotiation and Dispute Resolution
PADM 738 Conflict Mediation and Arbitration
PADM 743 Total Quality Leadership Philosophy

Assurance Services Concentration
ACCT 623 Operational Auditing
ACCT 624/IT 624 Information Technology Assurance Services
ACCT 625 Fraud Examination and Forensic Accounting
Any Accounting course at the 600 level or above with the exception of ACCT 601.

Business and Economic Forecasting Concentration
ECON 625 Mathematical Economics
ECON 706 Econometrics I
ECON 707 Econometrics II
ECON 708 Econometrics III

Course Waiver Policies
All Core and Required beyond the Core courses are subject to waiver by examination. Waiver exams will be offered and graded by the respective departments. Exceptions to waiver by examination can be made only if the student’s undergraduate major was in the waived discipline and/or the student has obtained an advanced professional certificate in the discipline (ex. CPA). Exceptions to the “waiver by exam” requirement must be noted in writing to the M.B.A. director by the respective department chair. Students who waive core courses may waive both the courses and the hours. Students who waive required courses beyond the core must replace these courses with courses of their choice outside their concentration (if they choose to concentrate). The objective is to enhance breadth of knowledge. Students concentrating in Information Systems, Management Science or Management of Service Operations must replace the waived “beyond the core” course with one in these concentration areas.

Students may also refer to the Policy on Experiential Learning Credit Options at the Graduate Level found in a previous section of this Catalog.

Students must complete all waiver exams prior to the start of the second semester of course work. A course may be challenged only one time. Students may complete waiver exams prior to beginning their course work if they choose to do so.

Admission
Prospective students may apply for entrance into the program for the fall, spring, and summer semesters. The Graduate School of Business and Public Administration welcomes applications from men and women who have earned bachelor’s degrees from accredited institutions. Admission to the program is competitive and is granted only to those who show high ability and likely success in graduate business study. Evidence of ability means that successful applicants will stand well above average in most criteria used to measure graduate promise.

Criteria used for admission include the candidate’s score on the Graduate Management Admission Test (GMAT), undergraduate grade averages and the trend of the grades during undergraduate work, letters of reference, a goals statement, and work experience.

The application procedure is as follows: submit to the Admissions Office (1) application forms for graduate study in business, (2) official transcripts of all previous college work, (3) one letter of recommendation, (4) an essay on personal and professional goals, and (5) scores on the Graduate Management Admission Test. Applicants whose native language is not English are also required to submit an acceptable score on the Test of English as a Foreign Language (TOEFL).

Application deadlines are June 1 for fall admission, November 1 for spring admission, and March 1 for summer admission. International student deadlines are April 1 (fall semester), October 1 (spring semester), and February 1 (summer semester).

B.A./M.B.A. Program
A five-year B.A./M.B.A. program is available for selected undergraduate students pursuing a Bachelor of Arts degree. For specific information please refer to the College of Arts and Letters degree and the BA-Economics section of this Catalog.

Master of Public Administration
William Leavitt, Program Director
Marjorie Wills, Program Manager

The primary mission of the Master of Public Administration Program at Old Dominion University is to enhance the knowledge, skills and abilities of public sector professionals and to serve other students who desire careers in public and non-profit organizations.

The program conveys knowledge and develops competencies in public sector management practices, public policy analysis, and public decision making processes. Graduates of Old Dominion University's M.P.A. program hold positions as program planners and analysts, line managers, and public policy managers in local, state, federal, and nonprofit agencies.

The Master of Public Administration program offered by the faculty of Public Administration and Urban Studies in the Graduate School of Business and Public Administration is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA), the national certifying organization for public administration programs. The Master of Public Administration program is designed to develop the student’s knowledge, skills, and competencies in five context areas:

1. public management processes, including public budgeting and personnel systems;
2. organizational design processes and behavior;
3. political, legal, and ethical concepts and issues of public administration;
4. quantitative and qualitative analysis techniques; and
5. policy analysis and program evaluation.

Many of the students in Old Dominion University’s graduate public administration program are employed in government and nonprofit agencies and seek to add to their management competencies in preparation for more senior positions. The program is offered in the evenings (and at other convenient times) to facilitate participation by students who are employed full time and wish to pursue their education on a part-time basis. Full-time students can complete the program within a two-year period. Part-time students usually require three to four years to complete the program.

Faculty Requirements
Curriculum
The M.P.A. curriculum consists of thirty-nine credit hours (thirteen courses). Courses are required in three categories:

1. the core (eight courses) that all students must complete;
2. the individual emphasis area (four courses) determined and selected by the student in conjunction with the graduate program director (one course can be internship); and
3. the capstone seminar.

The Core Module
The following courses are required of all public administration students. These core courses introduce the field of public management; demonstrate analytical approaches in public management; and focus on the administrative, organizational, legal, political, and ethical influences on public administration practice. (24 semester hours)
PADM 651 Introduction to Public Administration
PADM 655 Theories of Public Organization
PADM 671 Public Budgeting Systems
PADM 701 Public Policy Analysis
PADM 704 Methods of Program Evaluation
PADM 720 Public Personnel Administration
PADM 733 Legal Foundations of Public Administration
PADM 735 Research Methods in Public Administration

The Individual Emphasis Module
Students are responsible for designing and selecting an individual emphasis area of four courses which is appropriate for their particular career goals in the public or nonprofit sector. Individual emphasis areas must be selected in consultation with a faculty advisor or the M.P.A. graduate
program director. Students may select appropriate elective courses within other departments of the Graduate School of Business and Public Administration or in other colleges within the University. Examples of individual emphasis areas that students have designed and selected include: general public management; human resource administration; public policy analysis; public financial management; economics; decision science; governmental accounting; criminal justice administration; educational administration; and health services administration. (12 semester hours)

The following is a listing of elective courses available in Public Administration and Urban Studies:

- PADM 603 Environment of Public Administration
- PADM 660 Legal and Public Policy in Business
- PADM 668 Internship/Field Experience
- PADM 672 Public Financial Management
- PADM 696 Directed Readings
- URBN 633 Methods of Urban Planning
- URBN 702 Urban Resource Allocation
- URBN 703 Urban Program Design and Implementation
- URBN 705 Urban Law and Public Policy
- PADM 711 Urban Services Administration
- PADM 725 Business, Government and Society
- PADM 730 Theories of Conflict Resolution and Problem Solving (new)
- PADM 734 Negotiation and Dispute Resolution (new)
- PADM 738 Conflict Mediation and Arbitration (new)
- PADM 743 Total Quality Leadership
- PADM 745 Managing Development and Change in Public Organizations
- PADM 781 Intergovernmental Management
- PADM 795 Advanced Topics in Public Personnel Administration

The Capstone Module

Upon completion of the eight core courses, students are eligible to take the capstone seminar course. This course is designed as an integrative experience for students utilizing the knowledge, skills and techniques learned in the core courses to complete course work assignments in the capstone seminar. (Three semester hours)

PADM 746 Capstone Seminar

Internship/Field Experience

Practical professional experience in a public or nonprofit agency setting is an important asset for all public administration students. A formal internship is strongly recommended for students who lack significant experience in a public or nonprofit agency. Internships give students the opportunity to gain professional level experience in a government or nonprofit agency and provide agencies with the services of graduate students with high potential for future achievement. M.P.A. students have the opportunity to earn three semester credits for internships and apply these credits to their Individual Emphasis Module course requirement. The Internship/Field Experience course is a 300-hour public service experience in an approved agency.

Admission Requirements

The Department of Urban Studies and Public Administration welcomes applicants who have earned a bachelor’s degree from an accredited institution. Admission to the program is competitive and is granted only to those who show ability and likely success in graduate study. The applicant must meet the University’s general requirement - an overall grade point average of 2.80 on a four-point scale. Prospective students may apply for admission to the Master of Public Administration program throughout the year.

The decision to admit an applicant to the master’s program is based on a balanced review of official transcripts (particularly in the last two years of undergraduate education), the written statement of career objectives, a review of work experience for in-service students (detailed on the Request for GRE/GMAT Waiver form), written recommendations, and test scores when required.

The Application Package

The Old Dominion University Graduate Application can be downloaded from the website, www.odu.edu, or a Graduate Application Package may be received by calling (757) 683-3637. This package includes all forms necessary to apply to the Master of Public Administration program. To be considered for admission, applicants must submit the following:

- A letter of recommendation
- A statement of career objectives
- Two letters of recommendation (forms provided) from academic sources or employment supervisors
- Applicants whose native language is not English are required to submit an acceptable score on the Test of English as a Foreign Language (TOEFL).

Financial Assistance

Financial aid is available to graduate students at Old Dominion University. Financial aid may be available in the form of University fellowships, tuition grants, and research assistantships. The M.P.A. program offers graduate research assistantships available each semester. Research assistantships offer stipends, and research assistants pay the in-state tuition rate. In addition to the financial aid offered by the University, graduate students may be eligible for aid and student loans administered by other agencies. For information about part-time employment, scholarships, and student loans, contact the Office of Student Financial Aid.

For More Information

For more information about the Master of Public Administration program, please contact:

Otto Martinson, Program Director
2084 Constant Hall
College of Business and Public Administration
Old Dominion University
Norfolk, Virginia 23529-0224
Phone: (757) 683-3961
E-mail: www.odu-cbpa.org/uspa

For information and forms concerning application, contact the Admissions Office, Old Dominion University, Norfolk, VA 23529 Phone: (757) 683-3637.

For information concerning financial aid, contact the Office of Student Financial Aid, Old Dominion University, Norfolk, VA 23529 Phone: (757) 683-3683.

For information about on-campus housing, Contact the Director of Housing Operations, Old Dominion University, Norfolk, VA 23529 Phone: (757) 683-4283.

Visit the Old Dominion University world-wide web site at: http://www.odu.edu

Master of Science—Accounting

Otto Martinson, Program Director

Accounting services are becoming both broader and more specialized. The major changes that have occurred in the accounting profession dictate expanded and updated educational programs. The minimum education necessary for the professional accountant cannot be provided in four years of undergraduate study. A broad undergraduate program complemented by specialized graduate study is recognized as the ideal model for a professional accounting education.

The American Institute of Certified Public Accounts (AICPA) approved an amendment of their bylaws to require applicants for membership after the year 2000 to have 150 semester hours of education to sit for the CPA examination. The program is designed to accommodate both full-time and part-time students with courses offered in the evenings. Specialized tracks enable students to choose a course of study that best meets their educational and career aspirations.
Admission Requirements

Prospective students may apply for admission to the program for the fall, spring, and summer semesters. The Department of Accounting welcomes applications from men and women who have earned bachelor’s degrees from accredited institutions. Admission to the program is competitive and is granted only to those who show high ability and likely success in graduate business study. Evidence of ability means that successful applicants will stand well above average in most criteria used to measure graduate promise.

Criteria used for admission include the candidate’s score on the Graduate Management Admission Test (GMAT), undergraduate grade point averages and the trend of the grades during undergraduate work, one letter of reference, a goals statement, and previous work experience.

The application process is as follows: submit to the Graduate Admissions Office (1) application forms (may be done on-line) for graduate study in business, (2) official transcripts of all previous college work, (3) one letter of recommendation, (4) an essay on personal and professional goals, and (5) scores on the Graduate Management Admission Test (GMAT). Applicants whose native language is not English are also required to submit an acceptable score on the Test of English as a Foreign Language (TOEFL) Exam.

Prior to admission, each candidate must have completed 21 hours of credit covering financial accounting, management accounting, auditing and taxation. In addition, each candidate must have completed courses in economics, statistics, marketing, management, finance, information technology, and commercial law.

Application deadlines are July 1 for fall admission, November 1 for spring admission, and April 1 for summer admission. International student deadlines are April 15 (fall semester), October 1 (spring semester), and February 15 (summer semester).

Applicants who meet all the requirements for admission but have not completed all of the undergraduate prerequisites required for the program may be admitted on a provisional basis. Upon completion of the undergraduate prerequisites, the applicant’s status will be changed to regular admission. However, the provisionally admitted candidate will not be allowed to take any required graduate courses in the program until the provisional status is upgraded to regular status.

Degree Requirements

A minimum of 30 semester hours of graduate courses is required to complete the Master of Science in accounting. Students must maintain a cumulative grade point average of a least 3.00 in all graduate work taken.

Public Accountancy Track

This track is designed to meet the 150-hour requirement to take the Certified Public Accounting (CPA) exam and prepare the student for a successful career in public accounting.

### Required Courses—Accounting Credits
- ACCT 631 Seminar in Auditing 3
- ACCT 632 Seminar in Financial Accounting 3
- ACCT 637 Seminar in Management Accounting 3
- TAX 650 Tax Research 3

### Elective Courses—Accounting
Six credits of course work in accounting or taxation at the 500 level or above 6

### Required Courses—Business
- ACCT 640 Legal Environment of Accounting 3

### Elective Courses—Business
Nine credits of course work chosen from graduate business or public administration courses beyond the MBA core. At least three credits must be earned in information technology or e-commerce. 9

Managerial Accounting — Controllership Track

This track is for returning students who aspire to be controllers or chief financial officers. Ideally the student choosing this track should have between three to five years of experience and hold a professional accounting designation (CPA).

Accredited by the Institute of Internal Auditors for the Certified Internal Auditor (CIA) and Certified Financial Manager (CFM) Exams.

### Required Courses—Accounting Credits
- ACCT 623 Operational Assurance Services 3
- ACCT 626 Corporate Financial Reporting: A Global Perspective 3
- ACCT 637 Seminar in Management Accounting 3
- ACCT 630 Financial Statement Analysis and Evaluation 3
- ACCT 627 Operational Cost Control 3
- ACCT 727 Strategic Costing and Consulting 3

### Elective Courses—Business
Twelve credits of course work chosen from graduate business or public administration courses beyond the MBA core. At least three credits must be earned in information technology or e-commerce. 12 30

Assurance Services Track

This track is designed for the student interested in a career as an assurance services provider working either for an organization as an internal auditor or for a public accounting firm. The curriculum meets the requirements of the Institute of Internal Auditors for an Endorsed Internal Auditing Program. In addition, the track prepares students to successfully complete the Certified Internal Auditor (CIA), Certified Information Systems Auditor (CISA), Certified Fraud Examiner (CFE) and CPA Exams.

### Required Courses—Accounting Credits
- ACCT 631 Seminar in Auditing 3
- ACCT 623 Operational Assurance Services 3
- ACCT 624 Information Technology Assurance Services 3
- ACCT 625 Fraud Examination and Forensic Accounting 3

### Elective Courses—Accounting
Six credits of course work in accounting or taxation at the 500 level or above with the exception of ACCT 601 6

### Elective Courses—Business
Twelve credits of course work chosen from graduate business or public administration courses beyond the MBA core. At least three credits must be earned in information technology or e-commerce. 12 30

Taxation Track

This track is for entry-level students who wish to specialize in taxation.

### Required Courses—Accounting Credits
- ACCT 631 Seminar in Auditing 3
- ACCT 632 Seminar in Financial Accounting 3
- TAX 650 Tax Research 3
- TAX 651 Taxation of Corporations I 3
- TAX 652 Taxation of Partnerships and Partnerships 3
- TAX 660 Taxation of Property Transactions 3

### Required Course—Business
- ACCT 640 Legal Environment of Accounting 3

### Elective Courses—Business
Nine credits of course work chosen from graduate business or public administration courses beyond the MBA core. At least three credits must be earned in information technology or e-commerce. 9 30
The Department of Information Technology and Decision Sciences offers this degree program jointly with the Department of Computer Science; please see the entry under the Department of Computer Science for degree requirements.

Master of Science—E-Commerce Systems

William H. Crouch, Graduate Program Director

The Master of Science degree program in e-commerce systems has been deactivated. No new applications are being accepted. Please contact the Department of Information Technology and Decision Sciences for additional information.

Master of Taxation

Douglas Ziegenfuss, Program Director

The Master of Taxation degree program has been deactivated. No new applications are being accepted. Please contact the Department of Accounting for additional information.

Master of Urban Studies

Leonard Ruchelman, Graduate Program Director
Marjorie Wills, Program Manager

The Master of Urban Studies program is designed to meet the need for public and nonprofit sector administrators, analysts, and evaluators who have been exposed to multidisciplinary perspectives of urban problems and processes. The program offers a curriculum that introduces students to the study of the urban environment and provides students with conceptual tools in urban public management as well as basic urban data analysis and program analysis research skills.

The Master of Urban Studies degree is offered by the Department of Urban Studies and Public Administration of the Graduate School of Business and Public Administration. The department offers a broad selection of courses in urban studies and public administration to which students may add approved electives offered by other departments in the Graduate School of Business and Public Administration - courses in economics, management, marketing, finance, and information systems. Urban studies students also may take courses in the Department of Sociology and Criminal Justice, Political Science and Geography, and other academic departments offering graduate courses relevant to urban affairs.

The Master of Urban Studies program has been offered at Old Dominion since 1974.

Degree Requirements

Curriculum

The curriculum consists of thirty-six credit hours (eleven courses) and a three credit hour directed research. Courses are required in the following categories:
1. six core courses that all students must complete – 18 hours
2. five specialization courses determined and selected by the student in conjunction with the graduate program director – 15 hours
3. the urban capstone project – 3 hours

The Core Module

The following courses are required of all urban studies students. These core courses introduce the field of urban studies and demonstrate analytical and research approaches that focus on the urban environment. (18 semester hours)
URBN 607 Urban Research Methods
URBN 690 Introduction to Urban Studies
URBN 701 Urban Policy Analysis
URBN 704 Methods of Program Evaluation
URBN 705 Urban Law and Public Policy
URBN 702 Urban Resource Allocation or ECON 545 Urban Economics

The Specialization Module

The Urban Studies program offers specializations in two specific areas. In addition, students may design and select a five course individual specialization area which is appropriate for their particular career goals in the public or not-for-profit sector. Individual specialization areas must be selected in consultation with a faculty advisor or the M.U.S. Graduate Program Director. Students may select appropriate elective courses within other departments of the Graduate School of Business and Public Administration or in other colleges within the University.

The following is a listing of recommended courses for each of the two specializations. (15 semester hours)

Policy Analysis and Program Evaluation
URBN 711 Urban Services Administration
PADM 671 Public Budgeting Systems
PADM 672 Public Financial Management
PADM 743 Total Quality Leadership
PADM 754 Advanced Public Program Evaluation
PADM 757 Advanced Public Research and Decision Making Methods

With permission of the graduate program director, students may take appropriate courses from other colleges and disciplines.

Community Services and Planning
PADM 603 Environment of Public Administration
URBN 632 Environmental Planning
PADM 633 Methods of Urban Planning
URBN 634 Regional Planning
URBN 711 Urban Services Administration
PADM 730 Theories of Conflict Resolution and Problem Solving
PADM 781 Intergovernmental Management

With permission of the graduate program director, students may take appropriate courses from other colleges and disciplines.

The Urban Capstone Module

All urban studies students must complete URBN 685 Urban Capstone, a significant independent study project under the supervision of a faculty advisor as the capstone experience of the degree program (three credit hours).

Internship/Field Experience

Practical professional experience in a public or nonprofit agency setting is an important asset for all urban studies students. A formal internship is strongly recommended for students who lack significant experience in a public or nonprofit agency. Internships give students the opportunity to gain professional level experience in a government or non-profit agency and provides agencies with the services of graduate students with high potential for future achievement. M.U.S. students have the opportunity to earn three semester credits for internships and apply these credits to any specialization area they have chosen. The URBN 693 Internship/Field Experience course is a 300 hour public service experience in an approved agency.

Admission Requirements

The department faculty welcomes applicants who have earned a bachelor's degree from an accredited institution. Admission to the program is competitive and is granted only to those who show ability and likely success in graduate study. The applicant must meet the requirement of an overall grade point average of 2.80 on a 4.00 scale. Applicants must provide scores from the Graduate Record Examination taken within the past five years. To request a waiver, see the section for additional information. Prospective students may apply for admission to the Master of Urban Studies program throughout the year.

The decision to admit an applicant to the master's program is based on a balanced review of official transcripts (particularly in the last two years of undergraduate education), the written statement of career objectives, a review of work experience for in-service students, and written recommendations.
The Application Package

The Old Dominion University Graduate Application Package may be received by calling (757) 683-3637. This package includes all forms necessary to apply to the Master of Urban Studies program. To be considered for admission, applicants must submit the following:

* An official transcript of all previous college degree program(s).
* A written statement describing the purpose of seeking the Master of Urban Studies degree, i.e., how the degree will contribute to career goals and objectives (800 word minimum).
* Two letters of recommendation (forms provided) from academic sources or employment supervisors.
* Applicants must provide scores from the Graduate Record Examination taken within the past five years. (Applicants with three or more years of managerial or professional experience in public or nonprofit organizations may request a waiver of the Graduate Record Examination requirement by submitting a job description and detailed information on the Request for GRE Waiver form.)
* Applicants whose native language is not English are required to submit an acceptable score on the Test of English as a Foreign Language (TOEFL).

Doctor of Philosophy in Business Administration (Ph.D.)

Kae Chung, Program Director

The Doctor of Philosophy degree in business administration (Ph.D.) is a scholarly, research-based program with a professional orientation. The objective of the program is to prepare individuals of superior promise and potential for careers in higher education as faculty members engaged in teaching and research and for high level administrative and research careers in the private and public sectors. Persons completing the degree program must have demonstrated an in-depth knowledge of international business, economics, research methods, and high potential for making significant contributions to their field of specialization in business.

The Ph.D. degree requires competence in basic disciplines of international business, research tools, and in one of the following functional areas of business: finance, strategic management or marketing.

Requirements for Admission

Work for the doctoral degree is usually preceded by the successful completion of the M.B.A. degree, or its equivalent, from a recognized AACSB-accredited college or university. The applicant must submit an application, official transcripts of all college- or university-level work, provide scores on the Graduate Management Admission Test taken within the last five years, and provide three letters of recommendation, two from academic references, which attest to the individual's academic potential and ability for achievement. The applicant must also submit a personal statement of goals, approximately two to three pages, on how the completion of the doctoral program will assist in achieving personal and professional career goals.

The completed application materials will be reviewed by the graduate program director and faculty in the major area of study. They will evaluate the individual's abilities and motivation to succeed in the doctoral program. A personal interview may be required before the admission decision can be reached. A recommendation is made by the faculty and a final decision on admission is made by the graduate program director.

Requirements of the Ph.D. Degree

The following are the minimum requirements for the Ph.D. degree and must be considered in preparing the student's plan of study.

1. Satisfactory completion of at least 48 semester hours of post-master's course work including the dissertation.
2. Demonstrated competency in the following areas: International business field; Research methods and techniques; Economics; Functional Area of Business; and International Business Language.
3. Acceptable performance on a written and oral candidacy examination in the major field of study at the end of the program of course work. A student may only retake the candidacy examinations one time.
4. Completion of a dissertation representing the candidate's ability to conduct scholarly, original research. The quality of this research should be such that it would be worthy of publication in a refereed, scholarly journal.
5. Successful oral defense of the dissertation.

Retention Standards

To remain in good standing after admission to the program, students must maintain a minimum, cumulative grade point average of 3.20 in all course work attempted at the University. Students who fall below this minimum standard will have one semester to remedy this deficiency. Further, students may earn no more than three credit hours with the grade of C. Any students receiving a grade lower than C in course work will be removed from the program.

Time Limitation and Residency

The Ph.D. program assumes that a well qualified and highly motivated student can complete all degree requirements in four years of full-time work. If a student is unable to pursue the degree on a full-time basis, or if the major field is different from previous academic training, more time to complete the degree is usually required. The maximum time allowed to complete all degree requirements is eight calendar years from the date of initial enrollment in the program.

Each student is required to complete at least two regular semesters in full-time residency. These need not be consecutive. Full-time residency is defined as a minimum of nine credit hours per semester.

Transfer Credit

A maximum of 12 semester-hour credits (or equivalent) may be transferred from another university (including six hours earned through experiential learning credit options) and applied toward the Ph.D. course requirements. Transfer credit is approved at the discretion of the program director in consultation with the faculty in the student's major field of study.

Waivers Using Previous Graduate Work

A maximum of nine semester hours of master's-level graduate work may be applied toward completion of the requirements for the doctoral degree. The previous course work must have been of B letter-grade quality or better, and must have been completed within the five years immediately preceding entry into the doctoral program.

Candidacy Examination

The examination qualifying the doctoral student for candidacy for the Ph.D. in business administration is comprehensive in nature and designed to test the student's knowledge of subject matter in the major field, international business, and the ability to engage in independent research. The candidacy examination is usually taken following the semester in which the last formal graduate course(s) listed in the plan of study is (are) being taken. The examination contains both a written and oral component. The written portion is administered first. It is developed and graded by the members of the graduate faculty and the results reported to the student and program director.

After successful completion of the written examination, the student sits for an oral examination, which includes topics discussed in the written examination and any additional materials that the advisory committee deems are appropriate. The student will be expected to perform well on both the written and oral components of the examination. Rather than being merely pro forma, the oral examination is a serious and integral part of the qualifying procedure for candidacy. A student must pass both the written and oral sections.

Dissertation

The dissertation represents the final stage in obtaining the doctoral degree and provides evidence of the student's ability to conduct independent scholarly research. To effectively initiate, conduct, and conclude the dissertation phase of the program, the candidate must: 1) form a dissertation committee; 2) develop and defend a dissertation proposal; 3) complete the dissertation research and report the results in writing; and 4) orally defend the dissertation.

Dissertation Committee

The dissertation committee is formed by the student with the approval of the program director. The committee's purpose is to supervise the selection of the dissertation topic, constructively critique the research methodology, and serve as a guidance body until its completion. The committee should have at least three members, one of whom is from outside the depart-
Dissertation Proposal Defense

A candidate will select a topic for dissertation research under the guidance of his/her committee. The candidate will defend a proposal for the dissertation demonstrating the originality of the research, requisite literature review, and the methodology that will be used in conducting the research. The committee will judge the merits of the proposal, making any suggestions and/or additions as deemed necessary, and approve the proposal in writing, providing copies to the program director.

Dissertation Research and Preparation

Progress on the dissertation should be reported on a periodic basis to the chair of the dissertation committee and the appropriate members. In most instances, research results, drafts of the manuscript, and guidance will be forthcoming between the committee and the candidate during the research phase. While preparing the dissertation, candidates must be continuously enrolled for a minimum of one credit hour per semester. The total number of credit hours for the dissertation shall be no less than 18 and no more than 24 credit hours. Advice or assistance from committee members should not be expected unless the candidate is officially enrolled. General regulations and procedures governing the submission of the doctoral dissertation are provided in the University Guide for Preparation of Theses and Dissertations available from the Office of the Registrar.

Oral Dissertation Defense

The objective of the oral defense of the dissertation is to explore with the candidate the methodological and substantive contributions of the dissertation. Through this process, the examiners and the candidate reach a common understanding of the research area and can mutually agree upon its merits for publication. Majority approval by the examiners constitutes successful completion of the defense of the dissertation. The Doctor of Philosophy in business administration will be awarded upon successful completion of this examination and all other program requirements within the eight-year time limit.

Urban Services Doctoral Program–Management Concentration

Berhanu Mengistu, Graduate Program Director

The Ph.D. in urban services program is planned for discontinuation and will be replaced by a Ph.D. in public management and urban policy in the College of Business and Public Administration.

Certificate Programs

Two certificate programs, offered by the Department of Urban Studies and Public Administration, are open to individuals who submit evidence of having completed a master’s degree at an accredited college or university. A student enrolling in either certificate program may be eligible to apply to the Ph.D. in urban services program. If accepted, the full 12 credit hours earned in the certificate program may be transferred into the Ph.D. program. All courses are taught in the evening. The two certificates are as follows:

Advanced Certificate in Public Policy Analysis (12 credit hours). This certificate program is designed for persons who have an interest in public policy analysis and who wish to develop or refine their analytical skills. Students will gain skills in diagnosing and treating complex problems in the public sector, managing resources, generating program options, assessing feasibility, directing implementation, and measuring effectiveness and efficiency.

Professional Public Manager Certificate (12 credit hours). This certificate program is designed to help working professionals develop and sharpen their public management skills. The program is an individualized course of study designed in conjunction with the student’s department advisor. It consists of four courses that expose students to advanced concepts and methods of public management in such areas as personnel, budgeting, conflict management/negotiation, and politics/administration.
Darden College of Education

William H. Graves III, Dean
Paul L. Heine, Associate Dean

The Darden College of Education is comprised of the following departments: Early Childhood, Speech-Language Pathology and Special Education; Educational Curriculum and Instruction; Educational Leadership and Counseling; Exercise Science, Sport, Physical Education, and Recreation; and Occupational and Technical Studies.

Mission. The Darden College of Education is committed to excellence in teaching, scholarly activities, and service. The college strives to meet the needs of the community while maintaining national and international prominence and is dedicated to preparing distinguished professionals who are leaders in their field. The college fulfills its mission through its undergraduate and graduate programs in the fields of education, counseling and human services, exercise science, athletic training, sport management, recreation, training, fashion, speech-language disorders, and instructional and industrial technology as well as its continuing education activities.

Purpose. Old Dominion University’s major purpose in its teacher education programs is to prepare teachers and educational leaders who have knowledge of their teaching disciplines, abilities to practice state-of-the-art instruction to students of various cultural and socioeconomic backgrounds, and demonstrate dispositions which reflect commitment to teaching and learning as well as lifelong professional growth and development.

Goals. The teacher preparation programs embrace several broad goals. Candidates will possess the following:

a. Knowledge of their teaching field(s);
b. Pedagogical knowledge of principles and strategies which pertain to classroom organization and instructional practices;
c. Knowledge of curricular content, classroom organization, instructional materials, and industrial technology;
d. Knowledge of learners’ developmental characteristics and diversity;
e. Knowledge of educational contexts, ranging from group dynamics in classrooms, to the governance and financing of school divisions, to the characteristics and expectations of communities which schools serve;
f. Knowledge of educational values, purposes, ends, history, and philosophies which pertain to schooling in a democracy;
g. Ability to conduct research and utilize research findings in decisions to improve long-range planning, school operation and student learning.

All education programs are accredited by the National Council for the Accreditation of Teacher Education (NCATE). Teacher licensure programs are also approved by the Department of Education of the Commonwealth of Virginia.

The graduate programs provide Virginia and other regions with ten broad majors for the Master of Science in Education, three majors in the Master of Science, and two majors for the Education Specialist. Within these graduate majors are over 40 related interest areas designed to address the professional needs of students and the communities they serve. The prime objective of graduate programs is to improve the professional skills and attitudes of students to enable them to influence the quality of education (teaching, leadership, counseling, research, training, and community services) at the state, regional, national and international levels.

Fast Track Admission Policy

Fast Track graduate admission will be available to undergraduate students in the Old Dominion University Interdisciplinary Studies, Teacher Preparation Concentration as well as undergraduate students who have completed teacher preparation emphasis degrees in art, dance, English, foreign languages, geography, history, marketing education, math, music, physical education, political science, sciences, technology education, and theatre. To be considered under the Fast Track graduate admission policy, students must earn the B.S. or B.A. degree from Old Dominion University and must be applying to an M.S.Ed. degree in PK3/early childhood education, PK6/elementary education, secondary education, or special education.

In addition, to be considered for Fast Track graduate admission:

- An applicant must have a minimum 3.20 undergraduate cumulative GPA at Old Dominion University;
- An applicant must have passing scores in EACH of the three sections of the PRAXIS I exam as established by the Commonwealth of Virginia; composite scores will not be considered.

Licensure and Baccalaureate Degree Requirements

The Darden College of Education offers teacher preparation programs as well as non-teaching programs in human services counseling, exercise science, sport management, speech-language pathology and audiology, recreation and tourism studies, fashion merchandising, industrial technology and training specialist. Teacher preparation programs focus on the acquisition of competence in the following areas:

1. subject matter
2. preparing and presenting instruction;
3. diagnosing and assessing student achievement;
4. recognizing individual differences with respect to cultural diversity and the spectrum of exceptionalities;
5. implementing a sound philosophy of education based on an understanding of the foundations of American education; and
6. building and maintaining an effective classroom environment.

Program sheets are available in the Office of Teacher Education Services and appropriate departmental offices in the Colleges of Arts and Letters, Education, and Sciences. Students who wish to teach the disciplines of art, biology, chemistry, computer science, dance, earth science, physics, English, foreign languages, music, mathematics, social studies, and theatre must pursue appropriate majors in either the College of Arts and Letters or the College of Sciences. (See the College of Arts and Letters and the College of Sciences sections of this Catalog.)

Students interested in teaching early childhood education or in elementary schools must pursue a major in interdisciplinary studies through the College of Arts and Letters and a fifth year leading to a master’s degree in elementary education through the Darden College of Education. (For education course requirements in these areas, see the Department of Educational Curriculum and Instruction section of this Catalog.) Students interested in teaching special education must complete an undergraduate major in an academic content area with the option of selecting a minor in special education and must complete a fifth year leading to a master’s degree in special education through the Darden College of Education. Students interested in speech-language pathology and audiology must also complete a master’s degree in that area. (For details, see the Department of Early Childhood, Speech-Language Pathology and Special Education.) Students interested in teaching marketing education, technology education, or health and physical education must pursue a major in the discipline. (For details, see the Department of Occupational and Technical Studies or the Department of Exercise Science, Sport, Physical Education, and Recreation sections of this Catalog.)

General Education – New Portal to Appreciating our Global Environment

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer than 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

The Darden College of Education has approved the following substitutions. Students in the speech-language pathology and audiology major may substitute GEN 101 for a course in the fine and performing arts, literature or philosophy perspective areas. All majors in the Department of Occupational and Technical Studies must substitute GEN 101 for the literature perspective. Students majoring in human services may substitute GEN 101 for a course in the natural science and technology perspective area. Students majoring in recreation and tourism studies, exercise science, and health and physical education teacher preparation may substitute GEN 101 for a course in the fine and performing arts, history, literature, or philosophy perspective areas. Students majoring in sport management may substitute GEN 101 for a course in the fine and performing arts, literature, natural science and technology, or philosophy perspective areas. Students should consult their advisors for additional information.
Licensure Only Teacher Education Programs

Policy

Many students already possessing an undergraduate degree enter Old Dominion University for the sole purpose of meeting Virginia's teaching licensure standards. When these students apply for admission into an approved teacher education program, they are considered to be "licensure only" candidates and must meet the college's policy for admitting students into an approved teacher education program. Admission to Old Dominion University does not guarantee admission into degree and/or teacher preparation programs in the Darden College of Education.

Procedure

Students seeking regular admission into the licensure only program must:
1. apply for admission to Old Dominion University as a non-degree seeking graduate student;
2. have achieved a cumulative GPA of 2.75 for all college credit courses taken in the baccalaureate degree program;
3. achieve passing Praxis I or Virginia Board of Education-approved SAT score requirements as outlined by the Commonwealth of Virginia;
4. interview and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or site director;
5. submit an application for admittance into the Darden College of Education Teacher "Licensure Only" Program. Only 12 hours of professional education courses from another institution may transfer into a licensure only program.

Students who do not meet regular admission requirements may meet provisional admission into the licensure only program. For provisional status, a student must:
1. apply for admission to Old Dominion University as a non-degree seeking graduate student;
2. have achieved a cumulative GPA of 2.50-2.74 for all college credit courses taken in the baccalaureate degree program;
3. achieve passing Praxis I or Virginia Board of Education-approved SAT score requirements as outlined by the Commonwealth of Virginia;
4. interview and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or site director;
5. submit an application for admittance into the Darden College of Education Teacher "Licensure Only:" Program.

Students who do not meet the admission requirements listed above may request an exception to the departmental requirements on the Licensure Only Exception Request form obtained from a Teacher Education Services advisor or a site director. This exception requires approval from the department chair and associate dean/dean.

For more information on requirements in specific programs, students should refer to the individual program listings in this section or contact the Office of Teacher Education Services or the appropriate department in the College of Arts and Letters, the Darden College of Education, or the College of Sciences.

Observation and Participation

OTED 297 or ECI 301 is the introductory undergraduate course in most programs in the Darden College of Education (equivalent course in the Department of Exercise Science, Sport, Physical Education and Recreation is PE 230). The purpose of the course is to give students early opportunities for direct experience in elementary, middle, and high school classrooms. These experiences are designed to help prospective teachers decide whether or not teaching is the right choice for them, as well as to motivate them in preparing to teach.

Teacher Internship

Teacher internship is the culminating experience in the teacher education programs. This experience is a crucial part of a candidate's preparation to becoming a professional educator. During the teaching internship experience, candidates observe the operation of schools; analyze the growth and development of students; assist with classroom and extra-curricular activities; and ultimately assume responsibility for the academic instruction and management of the classroom. Candidates' work is evaluated by clinical facilitators (cooperating teachers) in the schools, in conjunction with University faculty.

To be eligible to participate in the teaching internship experience, the candidate must have been admitted into the Darden College of Education Teacher Education Preparation Program. This requires that the candidate pass the PRAXIS I or SAT examination before being placed in practicum. Additionally, undergraduate students must have earned an overall GPA of 2.75, as well as a PRAXIS I GPA in their academic major and professional education courses within a grade in their academic major or professional education courses below a C-. Graduate students must have earned an overall GPA of 3.0, as well as a 3.0 GPA in their major and professional education courses with no grade lower than a C. All candidates must also be recommended by their department for the teacher internship. Teacher internship is completed in the last semester of a candidate's program. All candidates must pass PRAXIS II prior to the teacher internship and attach the passing scores to the application.

A negative tuberculin test is required prior to student teaching. Prospective student teachers are required to provide authorization for the release of any disciplinary action that is contained in their student records. Additionally, prospective teacher interns should avail themselves of liability or tort insurance, which can be obtained through membership in the Student Virginia Education Association of Old Dominion University.

Professional Assessment Requirements for Licensure

All Old Dominion University students seeking initial licensure through completion of approved programs in the college are required to pass the PRAXIS I Academic Skills Assessment or meet the approved SAT scores and the appropriate PRAXIS II specialty area exam to receive training on the recognition of child abuse and neglect. This training is verified through specific courses in the approved professional education programs. Students who transfer courses into the approved programs in place of the courses that meet the child abuse and neglect requirements must provide documentation that they have met the recognition of child abuse and neglect standards. For more information contact the staff in the Teacher Education Services and Advising Office, Education Building Room 152, or go to www.odu.edu/tes.
with scores established by the Virginia Department of Education. PRAXIS I or approved SAT scores are required prior to admission to teacher education and by the student's 60th credit hour at Old Domin-
ition. Registration forms are available in the Office of Teacher Educa-
tion Services or on the web at www.teachingandlearning.org.
All early childhood, elementary, special education, and reading spe-
cialist candidates are required to take the Virginia Reading Assessment after completion of ESSE 468/568 and ECI 683. Candidates will be ex-
pected to pass the Virginia Reading Assessment when pass rates are estab-
lished.

Advanced Placement

With the exception of selected courses in the Department of Exercise Science, Sport, Physical Education and Recreation, advanced place-
ment credit is not granted for courses in the College of Education. Students may also refer to the Policy on Experiential Learning at the Undergraduate Level found in this Catalog.

Master of Science in Education, Master of Science, and Education Specialist Requirements

The Darden College of Education offers master's degree programs in occupational and technical studies, early childhood education, educa-
tional leadership, elementary education, counseling, physical education, reading, secondary education, special education, and speech-language pathology. Applicants in the secondary education program can choose from the following majors: biology, chemistry, and English.

The Education Specialist programs offered in the college are counsel-
ing and educational leadership. Within the educational leadership pro-
gram, concentrations are available in administration, supervision, and higher education. Joint programs are offered with the Departments of Educational Curriculum and Instruction and Occupational and Technical Studies. The urban education concentration within the interdisciplinary Ph.D. in urban services is offered by the Darden College of Education.

Admission

The student must initially meet all University admission requirements for graduate degrees and satisfy the individual program admission re-
quirements listed in this Catalog.

General Requirements

1. Students must satisfy the degree requirements established by the University and refer to the individual program requirements listed in this Catalog.
2. Students wishing to take a concentration, emphasis and/or interest area in the master's or license program must declare with the ap-
propriate department.
3. A comprehensive examination is required for both the master's de-
gree and the Education Specialist degree.

Nonthesis Option. Candidates for the master's degree in the Darden College of Education who are enrolled under the nonthesis option must meet all the program requirements, including the departmental course in Research Methods in Education and one or more courses that deal di-
rectly with special topics (e.g. Seminar, Topics) and/or training related to current problems. These courses are required at the conclusion of study and vary from program to program in content and format.

Thesis Option. The thesis option requires six semester credits in re-
search, and the candidate must prepare a thesis.

Financial Aid

For financial aid information, students should contact the Office of Student Financial Aid.

Urban Services Doctoral Program—
Education Concentration (Ph.D.)

William H. Graves III, Graduate Program Director

The Ph.D. in urban services program is planned for discontinuation and will be replaced by a Ph.D. in education in the College of Education.

Center for Alternative Paths for Professional Educators (CAPPE) Military Career Transition and Troops to Teachers Programs

State Initial Licensure Program

Paul Heine, Acting Director

The Center for Alternative Paths for Professional Educators (CAPPE) houses both the Military Career Transition Program and the Troops to Teachers placement assistance program. The Military Career Transition Program (MCTP) is a graduate, off-campus, evening and weekend pro-
gram designed for separating and/or retiring military members who wish to pursue teaching as a career. Military spouses, Department of Defense employees, and NASA and Coast Guard personnel are also eligible. Program participants earn both Virginia licensure and a Master of Science in Education. Licensure areas include Elementary Education (PK-6), Middle School (6-8) or Secondary (6-12) Math, English, Social Studies, Biology, Chemistry, Physics, Earth Science and Technology Education. Participants seeking Technology Education licensure may do so at the undergraduate or graduate level.

Potential candidates for the master's program must possess an under-
graduate degree and have had a minimum of six years of military service (active, reserve or national guard), be a spouse of a military member, be a Department of Defense employee, or other persons with similar qualifications as determined by the program director. All partici-
pants must have, at a minimum, six years of work experience. Candidates for the bachelor's degree in technology education must possess an as-
sociate degree or the equivalent and have a minimum of six years of military service (active, reserve, or national guard). Degree and licen-
sure courses are offered via distance education and traditional class-
room format at 18 locations throughout both southeastern and northern Virginia and in Bangor/Everett, Washington. Advisors are available at all MCTP locations; program participants are expected to meet with their advisor each term to update their records and register for the next sem-
ster. Credit recommendations from ACE, use of CLEP scores, and service experience/schools are included in the evaluation for licensure content areas. Most candidates are able to meet all program pedagogi-
cal requirements in 12-18 months including student teaching. Student teaching is a minimum of six weeks for military personnel, ten weeks for spouses/others.

The MCTP supports the Virginia Troops to Teachers office. For MCTP information contact the program office as follows: (757) 683-3337; mctprog@odu.edu. For Technology education (B.S. or M.S.) program information, please call (757) 683-4395.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor's degree from an ac-
ccredited institution with an overall grade point average of 2.80 for regular admission, (2) achieve passing scores on the PRAXIS I Academic Skills Assessment, (3) have served a minimum of six years of military service, be a spouse of a military member, be a Department of Defense em-
ployee, or other persons with similar qualifications as determined by the program director, (4) have, at a minimum, six years of work experience, (5) provide a 500-word goal statement and resume, and (6) complete an interview with an MCTP advisor. Candidates may begin course work prior to formal admittance but must meet all requirements within the first 12 credit hours in order to continue taking courses. Candidates who do not meet one or more of the above requirements may be admitted on a pro-
visional basis as determined by the program director.

Continuance. Students must (1) satisfy all admission requirements, (2) maintain a grade point average of 3.00, (3) receive a satisfactory observation evaluation, (4) pass the writing proficiency exam prior to 18 semester hours or obtain a score of 176 or above on the writing portion of the PRAXIS I exam, and (5) pass PRAXIS II prior to teacher intern-
ship. Passing scores must be attached to the teacher internship applica-
tion. For the PK-6 program, all early childhood, elementary, and special education candidates are required to take the Virginia Reading Assess-
ment after completion of ESSE 468/568 and ECI 680. Candidates will be ex-
pected to pass the Virginia Reading Assessment when pass rates are estab-
lished.

 Exit. All candidates must (1) have a 3.00 grade point average, (2) complete all courses and electives, (3) earn a passing rating on their written comprehensive examination, (4) earn a passing score on PRAXIS
Military Career Transition Program Requirements

Corequisites for licensure. Candidates must meet content requirements as outlined by the Virginia Board of Education for individual licensure areas. These content requirements vary according to licensure area (PK-6, 6-8) and secondary (6-12) content areas. An advisor will evaluate transcripts and previous schooling to ensure that all content requirements are met. Students requiring additional content must complete that course prior to student teaching and/or licensure. An MCTP advisor will furnish each student with a comprehensive evaluation detailing the student’s required content.

Note: Questions of transfer and course substitution are made on an individual basis, with an advisor’s recommendation and program director approval.

Program of Study PK-6

ECI 569 Foundations and Observation in Education 3 credits
ECI 616 Design for Effective Instruction 3 credits
ESSE 513 Fundamentals of Human Growth and Development 3 credits
ECI 530 Instructional Technology and the Classroom or OTED 789 Instructional Technology in Education and Training 3 credits
ESSE 506 Students with Diverse Learning Needs in the General Education Classroom 3 credits
ECI 640 The Management of Learning and Instruction 3 credits
ECI 680 Reading to Learn Across the Curriculum 3 credits
ECI 656 Developing Instructional Strategies for Elementary Education 3 credits
ESSE 568 Language Acquisition and Reading for Students with Diverse Learning Needs 3 credits
ECI 619 Classroom Research and Assessment in Curriculum and Instruction 3 credits
ECI 586 Student Teaching for Special Endorsement 6 credits

Total hours master’s degree and licensure: 39

Content Area (corequisite requirements): Social Science (6 semester hours); Arts and Humanities (6 semester hours); History (6 semester hours); Mathematics (12 semester hours); English (12 semester hours); and Science (10 semester hours).

Program of Study (6-8)

ECI 569 Foundations and Observation in Education 3 credits
ECI 616 Design for Effective Instruction 3 credits
ESSE 513 Fundamentals of Human Growth and Development 3 credits
ECI 530 Instructional Technology and the Classroom or OTED 789 Instructional Technology in Education and Training 3 credits
ESSE 506 Students with Diverse Learning Needs in the General Education Classroom 3 credits
ECI 640 The Management of Learning and Instruction 3 credits
ECI 680 Reading to Learn Across the Curriculum 3 credits
ECI 656 Developing Instructional Strategies for Elementary Education 3 credits
ESSE 568 Language Acquisition and Reading for Students with Diverse Learning Needs 3 credits
ECI 619 Classroom Research and Assessment in Curriculum and Instruction 3 credits
ECI 586 Student Teaching for Special Endorsement 6 credits

Total hours master’s degree and licensure: 39

Content Area (corequisite requirements): Social Science (6 semester hours); Arts and Humanities (6 semester hours); History (6 semester hours); Mathematics (12 semester hours); English (12 semester hours); and Science (10 semester hours).

Programs for Continued Learning

The Programs for Continued Learning Department extends to the community special conferences, workshops, seminars, in-service training, and short courses. Drawing on the faculty of the college and experts in the field, programs are designed in areas such as leadership, counseling/interpersonal skills, learning and curriculum design, training and development, health education, and physical fitness. Clients consist of educators as well as professionals in business, industry, and public, private, and governmental agencies. Programs are designed to help professionals increase and upgrade their development activities. Professional and personal development programs are awarded continuing education credit (CEUs).

EARLY CHILDHOOD, SPEECH-LANGUAGE PATHOLOGY AND SPECIAL EDUCATION

Katharine C. Kersey, Chair

The Department of Early Childhood, Speech-Language Pathology and Special Education (ESSE) is dedicated to preparing professionals to serve in the fields of education, clinical settings, and community agencies. ESSE
füllt this mission through its undergraduate and graduate degrees as well as licensure programs. An undergraduate degree is offered in speech-language pathology and audiology. Graduate degree programs and licensure are offered in early childhood education, speech-language pathology, and special education. Special education students may emphasize either a combination of learning disabilities, emotional and behavioral disorders, and mental retardation or early childhood special education and severe disabilities.

Non-degree students intending to enter a graduate program must meet with the appropriate graduate program director upon completion of six hours.

The Child Study Center

The Lions Child Study Center, located on Hampton Boulevard on the Old Dominion University campus, serves as a cooperative link among the university, community, and early childhood, special education and speech pathology/audiology programs of the University. In conjunction with its mission of urban outreach, the center provides inservice education, consultation, and clinical services to the local community, agencies, institutions, and school systems. In addition to serving as a visible community resource for referral and information, the center also conducts on-site demonstrations for training and informational exchange, provides parent training, tutorial and assessment services, and develops intervention and service models.

Programs for Children

Mission Statement. Old Dominion University's primary purpose in the children's programs at the Child Development and Child Study Centers is to train teacher candidates and provide a setting for research conducted by the University community. A secondary mission is to provide exemplary child care for the greater Hampton Roads community.

The Child Development Center. The Old Dominion University Child Development Center is a full-service, full-time program offering quality care for children ages eight weeks through kindergarten. In each of seven classrooms, a lead teacher is assisted by practicum students from early childhood and other academic areas of study. The lead teacher is a master's-level professional, trained to be knowledgeable about and attentive to the individual needs of children. Teacher aides also are employed to work in the center and are chosen from students in various disciplines who are trained and interested in working with young children. The Child Development Center provides care for children 48 weeks of the year from 7:30 a.m. to 5:30 p.m. and is housed in two locations: 1520 West 48th Street (the five classes for younger children) and the Child Study Center on 45th Street (the two classes for the oldest children).

The Preschool/Kindergarten Program. The Preschool/Kindergarten Program operates three hours a day, five days a week and emphasizes developmentally appropriate practices for children ages 3-5. The overall curriculum includes art, music, science, reading and math readiness, physical education, computers, foreign language, and swimming. Children of kindergarten age are given a specific readiness program in preparation for their entrance into first grade. Lead teachers are assisted by graduate practicum students from early childhood education, as well as students from other academic areas of study, including speech-language pathology, psychology, leisure studies, elementary education and special education.

The Kiwanis Parenting Center

Old Dominion University’s Kiwanis Parenting Center, a resource for the Hampton Roads community, provides education, training, research and support services for parents, professionals and Old Dominion students. Its purpose, which is to benefit children and enhance the lives of families, is realized through lectures, workshops, seminars and support groups conducted by and for community and University personnel and patrons. It is located on the second floor of the Lions Child Study Center and includes a large lecture hall, a parent library and a children's playroom.

Speech and Hearing Clinic

The Speech and Hearing Clinic including the Scottish Rite Center provides diagnostic and remedial clinical services to speech-language and hearing impaired children and adults. It operates on a twelve-month, five day per week schedule. Referrals are accepted from medical and educational agencies. Speech-language services are provided by advanced undergraduate and graduate student clinicians in Old Dominion University's speech-language pathology program who are supervised by ASHA certified clinical faculty members. Audiology services are provided by clinical faculty members holding ASHA certification and by student clinicians who are supervised by these clinical faculty members. Clients typically served by the clinic display hearing, language, voice, fluency (stuttering) and articulation disorders as well as characteristics of social and foreign dialects.

Bachelor of Science—Speech-Language Pathology and Audiology Major

Nicholas G. Bountress, Program Director

The undergraduate program in speech-language pathology and audiology is designed to provide students with the academic and clinical experiences needed to identify and assess speech, language and hearing disorders and to prescribe and implement effective therapeutic procedures. The program includes course work and a supervised clinical practicum (ESSE 454). The minimum number of hours required for the degree is 120. Consistent with the mandates of Public Law 99-457, undergraduate programs in speech-language pathology and audiology in the United States cannot prepare bachelor's level students for employment in any professional setting. Therefore, the undergraduate program at Old Dominion University serves as a feeder program to the master's degree program which prepares students for employment through advanced course work, on-campus and off-campus practica, and a student teaching experience.

LOWER DIVISION GENERAL EDUCATION Credits

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (satisfied in the major by ESSE 459)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major by ESSE 458)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

Social Science                                           | 6       |

Major Courses 300-400 level (66 hours)

Third Year—first semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 351 Anatomy of Speech, Language and Hearing</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 450 Survey of Comm Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 460 Hearing Disorders and Basic Aud</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 449W Orientation to Clinic Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 350 Aspects of English Language</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Year—second semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 352 Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 400 Trends and Issues in General and Special Education</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 451 Articulation/Phon Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 453 Language Develop &amp; Disorders</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 461 Aural Rehabilitation I</td>
<td>3</td>
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</tbody>
</table>

Third Year—third semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 457 Language Diagnosis and Remediation</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 411 Behavior Management Tech</td>
<td>3</td>
</tr>
<tr>
<td>ESSE Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year—first semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 413 Fundamentals of Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 465 Signig I-Begin Nonverbal Com</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 454 Clinical Practicum</td>
<td>3</td>
</tr>
<tr>
<td>ESSE Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year—second semester

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 452 Voice Disorders</td>
<td>3</td>
</tr>
</tbody>
</table>
ESSE 458 Speech and Hearing Science 3
ESSE 459 Seminar in Speech Path Methods 3
ESSE Electives (2) 6

Major courses in which a grade below C- was earned must be repeated.

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.50 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Admission, Continuance and Exit Requirements

Admission. Requirements are as follows: (1) Students must have completed one year of course work with a grade point average of at least 2.50, and (2) students must have an interview with a program advisor.

Continuance. A cumulative grade point average of 2.50 in all major courses is required for continuing status. Grades below C- in major courses must be retaken to attain a grade of C- or higher.

Exit. Undergraduate majors must have satisfied University and program requirements, passed the University Exit Examination of Writing Proficiency and have a grade point average of at least 2.50 in all major courses.

Minor in Speech-Language Pathology and Audiology (18 Hours)

Required Courses: ESSE 450, 460. Elective courses (select four for a total of 12 credits): ESSE 451, 452, 453, 458, 459, 461. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Graduate Study

The Department of Early Childhood, Speech-Language Pathology and Special Education (ESSE) offers courses leading to the degree of Master of Science in Education with majors in early childhood education, speech pathology and audiology and special education.

Master of Science in Education—Early Childhood Education

Katharine C. Kersey, Graduate Program Director

This program leads to a Master of Science in Education with a major in early childhood education. Accredited by the National Association of Early Childhood Association, the master’s program in early childhood education concentrates on the teaching of children from infancy through third grade with an emphasis on education in child-care centers, preschools, and kindergartens as well as public schools. Out-of-school learning, including parent education, and the young child's interaction with the family are a major focus.

Individuals entering the master’s program in early childhood education must already possess a bachelor’s degree in the liberal arts and sciences (or equivalent). For those who desire to be licensed in the state of Virginia, prerequisite course work must meet the Virginia state competencies for PreK-3 and must fulfill the following requirements: English – 12 semester hours; Mathematics – 9 semester hours; Science – 9 semester hours; History – 6 semester hours; Social Science – 6 semester hours and Computer/Technology – 3 semester hours.

Two prerequisite education courses are required in addition to the content courses listed above: ESSE 468 Language Acquisition and ECI 304 Microcomputers and the Curriculum. For students who have the prerequisite courses, the master’s degree requires 30-36 semester hours of graduate study, including practicum and student teaching.

Those who have completed the undergraduate degree in interdisciplinary studies (IDS) at Old Dominion University will have completed all of the necessary prerequisite course work required by the state of Virginia and will be qualified to apply for entrance into the master’s program. In addition, the undergraduate IDS degree provides enough special education courses to qualify for a minor in special education. With a master’s degree in early childhood education, these students will be highly marketable – with expertise not only in teaching regular education but special needs children as well. (Please see the College of Arts and Letters section of the catalog for baccalaureate degree requirements in interdisciplinary studies.) Students are encouraged to obtain current program information from the Darden College of Education web site at: http://www.odu.edu/earlych.

Admission, Continuance, and Exit Requirements*

Admission. Admission to the graduate program in early childhood education is granted by the department’s graduate program director in conjunction with early childhood education faculty. The following requirements are necessary for admission to the program:

1) a bachelor’s degree with an academic content from an institution accredited by a regional accrediting body or an equivalent degree from a foreign institution, which includes (for students seeking licensure in the state of Virginia) the prerequisite course work required to meet the Virginia state competencies for PreK-3 (as listed earlier);
2) an undergraduate grade point average of 2.80 or better;
3) a Graduate Record Examination (GRE) score of at least 900 (Verbal and Quantitative sections with a minimum verbal component of 450) and 4.5 on the analytical writing section or a Miller Analogies Test (MAT) minimum score of 45.
4) successful completion of the Praxis I exam before enrolling in practicum (ESSE 369), as determined by the Virginia Department of Education (for all students pursuing teacher licensure)*; and
5) a 500 word goal statement indicating why the student wishes to enroll in the early childhood education program.

Applicants whose GRE scores fall slightly below the minimum requirement may be considered for provisional admission and may be required to retake the GRE. Applicants whose grade point average falls below the acceptable range may be required to take academic content courses to bring their GPA up to the required minimum.

Continuance. Students must:

1) maintain a grade point average of 3.00;
2) earn no more than two grades below B-. Students must retake courses in which grades below B- are earned and receive grades of B- or higher. Obtaining three grades below B- leads to suspension from the program;
3) earn passing scores on Praxis I before enrollment in Practicum and ESSE 679; and
4) for licensure (PK-3), successfully complete Practicum (ESSE 688) with a grade of B or better in order to be approved for student teaching.

Exit. Students must:

1) have a grade point average of 3.00 or better;
2) pass the college writing proficiency examination - IF Praxis I has NOT been a requirement;
3) pass the written comprehensive examination (with no more than one re-examination);
4) for licensure (PK-3), successfully pass Praxis II (as determined by the Virginia Department of Education)*;
5) successfully complete all requirements for the program and University requirements for graduation; and
6) take the Virginia Reading Assessment.

* Students who are already licensed or who do not wish to be licensed to teach in the Commonwealth of Virginia will have more flexibility in their course work and will be advised according to their needs and career choices.
Program of Study (for students desiring to be licensed in the state of Virginia PK-3)

<table>
<thead>
<tr>
<th>Prerequisite Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 488 Language Acquisition and Reading for Students with Diverse Learning Needs</td>
<td>3</td>
</tr>
<tr>
<td>ECI 304 Educational Applications of Technology or Classroom</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Required Courses (for licensure - PK-3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 506 Special Needs Child in the Gen. Ed. Classroom</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 670 Assessment and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 677 Advanced Child Theory</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 679 Techniques of Child Management</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 688 Practicum in ECE</td>
<td>1-6</td>
</tr>
<tr>
<td>ECI 683 or Diagnostic Reading or</td>
<td></td>
</tr>
<tr>
<td>ECI 561 Teaching of Reading in the Content Area</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 586 Student Teaching</td>
<td>6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Courses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 595 Mini-courses - 1 hour each, up to 6 hours</td>
<td>1</td>
</tr>
<tr>
<td>ESSE 674 Constructivist Teaching - From Theory to Practice</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 676 Foundations and Contemporary Issues in ECE</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 678 Integrating Instruction Across the Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 681 Developmental Day Care</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 682 Seminar in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 683 Early Childhood Literature</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 684 Infancy &amp; Caregiving</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 687 Helping Children Cope With Stress</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 689 Integrating Language Arts Across ECE</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 690 The Child &amp; The Family</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 693 Integrating Science &amp; Social Studies into the ECE Curriculum</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 694 Integrating Math Across the ECE Curriculum</td>
<td>2</td>
</tr>
</tbody>
</table>

Licensure-Only (PK-3) Program

This program is designed for individuals who have a non-teaching B.S. or B.A. degree and wish to complete a Licensure-Only Program in grades PreK-3.

Admission Requirements:
1. Individuals entering this graduate program must already possess a bachelor's degree in the liberal arts and sciences (or equivalent). Prerequisite course work must meet the Virginia state competencies for PreK-3 and must fulfill the following requirements: English – 12 semester hours; Mathematics – 9 semester hours; Science – 9 semester hours; History – 6 semester hours; Social Science – 6 semester hours; Arts and Humanities – 6 semester hours; and Computer/Technology – 3 semester hours.
2. Undergraduate grade point average of 2.75.
3. Passing scores on Praxis I (as determined by the Virginia Department of Education) before enrollment in practicum (ESSE 679).

Continuance: Maintain a grade point average of 3.0

Exit: Must have passing Praxis II scores (as determined by the Virginia Department of Education).

Required Professional Core (no transfer credits will be accepted into the professional core)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 568 Language Acquisition for Students with Diverse Learning Needs</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 676 Foundations and Contemporary Issues in ECE</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 677 Advanced Child Theory</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 678 Instructional Strategies in ECE</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 679 Advanced Classroom Management w/ Practicum</td>
<td>3</td>
</tr>
<tr>
<td>ESSE 689 Integrating Language Arts in ECE</td>
<td>2</td>
</tr>
<tr>
<td>ESSE 586 Student Teaching</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 22

(In order for a student to move from the licensure-only program into the master's program in early childhood, application to the graduate program must be made before successful completion of 12 semester hours of graduate work. If accepted into the program, all of the hours would be counted toward the graduate degree.)

Guaranteed Entry Program

Undergraduate students will be automatically accepted into the graduate program in early childhood education if they have met the following requirements.
1. 3.50 grade point average and 1100 SAT or 3.25 grade point average and 1180 SAT at the high school level.
2. A minimum 3.50 grade point average in undergraduate course work.
3. Permission of the early childhood education faculty.
4. Passing scores on all parts of the PRAXIS I exam.

Master of Science in Education—Speech-Language Pathology

Nicholas G. Bountress, Graduate Program Director

The graduate major in speech-language pathology is designed to prepare professionals who are able to design and implement intervention programs with children and adults who display a wide variety of speech, language and hearing disorders. Accredited by the American Speech-Language and Hearing Association (ASHA), the program offers advanced coursework, on-campus practica and off-campus practica in diverse clinical settings to assure students optimal preparation for employment in medical, rehabilitative and educational settings.

A typical curriculum for graduate majors in speech-language pathology and audiology includes the following: ESSE 549, 554, 559, 635, 636, 650, 651, 652, 654, 655, 656, 657, 658, and 660.

Admission, Continuance and Exit Requirements

Admission. Students must (1) have a minimum undergraduate grade point average of 2.80 and 3.00 in the major to be considered for admission, (2) have a minimum 400 on the Verbal and 4.0 on the Analytical subtests of the GRE) to be considered for admission, and (3) provide three letters of reference.

Continuance. Students must (1) maintain a graduate major average of 3.00; (2) satisfactorily complete all practica; and (3) earn no more than two grades below B-. Students must retake courses in which grades below B- are earned and receive grades of B- or higher. Obtaining three grades below B- leads to expulsion from the program. Teacher are admitted to clinical practica upon satisfactory attainment of prerequisite competencies, including the Grammatical Categories Test, and with the permission of program faculty. Students planning on engaging in public school practica must pass the Praxis I prior to placement.

Exit. Students must (1) have a graduate major average of 3.00; (2) pass the department writing proficiency examination; (3) meet all academic and clinical competencies; (4) pass a written comprehensive examination; (5) successfully complete all required practica; (6) successfully complete a written research project; and (7) have an exit interview.

For all students who hold an undergraduate degree in the field, the master's degree program in speech-language pathology requires 42 hours of graduate study. This requirement varies according to the number and type of undergraduate academic courses and clinical practice. Students who do not hold an undergraduate degree in the field must satisfactorily complete prerequisite coursework and practica. All degree candidates are required to satisfactorily complete a written research project and a written comprehensive examination. Students seeking state teacher certification will be required to pass Praxis I or achieve Virginia Board of Education-approved SAT scores. All students must take Praxis II prior to graduation. Students must pass Praxis II to be ASHA certified and licensed in the Commonwealth of Virginia. Students are expected to demonstrate professional competencies and attitudes before graduation is certified.
Guaranteed Entry Program. Undergraduate students in speech-language pathology will be automatically accepted into the graduate program in speech-language pathology if they have met the following requirements.
1) 3.5 grade point average and 1080 SAT (525 verbal) or 3.25 grade point average and 1180 SAT (525 verbal) at the high school level;
2) 3.5 grade point average in undergraduate speech-language pathology course work;
3) Satisfactory completion of a clinical practicum; and
4) Permission of the speech-language pathology faculty.

Program Financial Aid
Graduate students are eligible for financial aid in the form of scholarships, assistantships and traineeships through the University and the program in speech-language pathology.

Clinical Facilities
Students engage in clinical practica, which are housed in the Child Study Center’s Speech and Hearing Clinic and Scottish Rite Center for Childhood Speech and Language Disorders, and arranged at numerous hospitals, clinics, rehabilitation centers, training centers and public schools in the city and region.

Master of Science in Education—Special Education
Cheryl S. Baker, Graduate Program Director
The special education master’s program prepares teachers and agency personnel to design and implement programs for individuals with disabilities in a variety of settings. This master’s degree program, with endorsement, can be completed in approximately two years during which the enrolled students will specify either a combination of emotional/behavioral disorders, learning disabilities, mental retardation, or early childhood special education and/or severe disabilities.

The special education graduate program is committed to a philosophy of serving as a catalyst to promote awareness, understanding, and acceptance of individuals with disabilities. The course work focuses on the improvement of the quality and scope of educational and related services available to individuals with disabilities from infancy to adulthood.

The graduate programs in special education, in addition to meeting the Master of Science in Education degree requirements, satisfy Virginia state teacher endorsement in emotional/behavioral disorders, learning disabilities, mental retardation, early childhood special education, and severe disabilities. Graduates are prepared to work effectively with children, adolescents, and adults who require special educational services.

Classroom instruction is supplemented by field experiences with children, adolescents, and adults in a variety of settings. Teacher interns have been placed in children’s hospitals, special education classes in public and private facilities, residential psychiatric hospitals, mental health centers, and community agencies.

Graduates in special education serve as key members of child study teams and are prepared to address educational, emotional, and physical disabilities. They also find employment as educational therapists, psycho-educational diagnosticians, and special education teachers and staff members in public and private schools. Students are encouraged to obtain current program information from the Darden College of Education web site at http://www.odu.edu/educ/sped.

Admission, Continuance and Exit Requirements
Admission. Admission to the graduate program in special education is granted by the department’s graduate program director in conjunction with special education faculty. The following requirements are necessary for admission to the program. Individuals who have a non-teaching B.S. or B.A. and wish to earn an M.S. Ed. and qualify for a teaching license in special education must meet the liberal arts and sciences content requirements.

Regular admittance requires
1) A baccalaureate degree from any accredited institution that meets the following prerequisite liberal arts/sciences degree requirements:
   - English: 12 semester hours
   - Mathematics: 12 semester hours
   - Science: 10 semester hours (with at least three classes in at least two different sciences including at least one laboratory)
   - History: 6 semester hours
   - Social Science: 6 semester hours
   - Arts and Humanities: 6 semester hours
   - Computer/Technology: 3 semester hours
2) An undergraduate grade point average of 2.80 or better
3) A Graduate Record Exam (GRE) score of at least 900 (verbal and quantitative sections with a minimum verbal component of 450), and 4.0 on the analytical writing section OR a Miller Analogies Test (MAT) minimum score of 45
4) A 400-500 word goal statement indicating why the student wishes to enroll in the special education program
5) successful completion of the Praxis I or SAT exam, as determined by the Virginia Department of Education

Provisional admittance requires
1) A baccalaureate degree from any accredited institution that meets the prerequisite liberal arts/sciences degree requirements described in regular admittance above
2) An undergraduate grade point average of 2.80 or better
3) A Graduate Record Exam (GRE) score of at least 800 (verbal and quantitative sections with a minimum verbal component of 400), and 4.0 on the analytical writing section OR a Miller Analogies Test (MAT) minimum score of 40
4) A 400-500 word goal statement indicating why the student wishes to enroll in the special education program
5) successful completion of the Praxis I or SAT exam, as determined by the Virginia Department of Education

Fast Track Teacher Preparation Admission Policy. Please refer to the section on Fast Track Admission at the beginning of the Darden College of Education section of this catalog.

Continuance. Students must: (1) maintain a grade point average of 3.00 overall and (2) successfully complete all competencies relative to their area of emphasis.

Exit. Students must: (1) have a grade point average of 3.00 overall and a grade of B- or better in all course work; (2) satisfactorily complete all program requirements, including undergraduate content hour deficiencies, the comprehensive examination and internship/student teaching experience; (3) complete a Graduate Student Assessment; (4) complete the Post Task Rating Form online at www.odu.edu/educ/sped; and (5) submit a professional portfolio according to program guidelines prior to the awarding of the master's degree in special education. Beginning in December 2004, candidates seeking initial special education licensure will be required to take the Virginia Reading Assessment.

Comprehensive Examination. All students seeking a master's degree in special education are required to complete successfully a written comprehensive examination. On this examination, students will be required to answer questions in general special education and questions from their areas of specialization. Specialization questions will be congruent with the student’s academic and professional preparation. If not passed during the first administration, students may only sit for the exam a second time. Failure to successfully pass the comprehensive examination will result in not completing the requirements for the Master of Science in Education.

Program Requirements
For all students who have the prerequisite course work in education, the master’s degree requires 30-45 semester hours of graduate study. For some students, state teacher endorsement may require additional work. Students are expected to demonstrate dedication to special education clients and to programming in classroom and clinical settings before graduation is certified.

Emotional and Behavioral Disorders, Learning Disabilities, and Mental Retardation Endorsement Areas
This program, which provides endorsements in two of the following three areas, emotional/behavioral disorders, learning disabilities, and mental retardation, is designed to prepare professionals who are able to design and implement appropriate educational programs for students who manifest these disabilities. The program combines course work, supervised practica and internship to facilitate the integration of theory and practice in the development of innovative interventions applicable for individuals with special needs from preschool through adult in both public and private facilities. Program competencies prepare students to
work in school-based programs, clinics, hospitals, and agency settings. 
Program practica and internship allow students opportunities to apply 
management, instructional and problem-solving skills in one-to-one and 
group settings.

**Prerequisite Courses or Undergraduate Minor in Special 
Education**

- ESSE 400/500 Foundations/Legal/Ethical Aspects in General and 
Special Education
- ESSE 411/511 Behavior Management Techniques for Students with 
Disabilities
- ESSE 413/513 Fundamentals of Human Growth and Development
- ESSE 415/515 Instruction/Service Delivery for Educating Students 
with Mild Disabilities
- ECI 304 Educational Applications of Computers OR
- ECI 530 Instructional Technology and the Classroom

**Graduate Core Courses**

- ESSE 514 Psychoeducational Assessment for Students with Diverse 
Learning Needs
- ESSE 530 The Family and Child with Special Needs: Lifespan 
Transitions
- ESSE 588 Language Acquisition and Reading for Students with 
Diverse Learning Needs
- ESSE 617 Collaboration and Consultation for Students with Diverse 
Learning Needs
- ESSE 720 Curriculum and Instruction: Research into Practice
- ECI 680 Reading to Learn Across the Curriculum
- ECI 533 Developing Instructional Strategies PreK-6: Mathematics

**Endorsement Areas:** (choose two)

**Emotional/Behavioral Disorders**
- *ESSE 618 Characteristics and Strategies for Teaching Students with 
Emotional/Behavioral Disorders
- *ESSE 621 Alternative Strategies for Managing Challenging Behavior
  *Requires practicum of 45 hours and passing scores on Praxis I.

**Learning Disabilities**
- *ESSE 624 Characteristics and Assessment of Learning Disabilities
- *ESSE 626 Instructional Strategies for Students with Learning 
Disabilities
  *Requires practicum of 45 hours and passing scores on Praxis I.

**Mental Retardation**
- *ESSE 623 Characteristics and Strategies for Teaching Students with 
Mental Retardation
- *ESSE 628 Teaching Students with Severe Disabilities
  *Requires practicum of 45 hours and passing scores on Praxis I.

**Internship**

- ESSE 586 Teacher Candidate Internship

**Early Childhood Special Education and Severe Disabilities**

**Endorsement Areas**

The early childhood special education program is designed to pre-
pare students to teach children from birth to age nine who manifest dis-
abilities or who are at risk of later school failure. Students endorsed in 
the area of early childhood special education will be eligible to teach in 
infant and preschool programs in both public and private settings. The 
program in severe disabilities is designed to prepare teachers to instruct 
individuals traditionally labeled as moderately, severely, or profoundly 
mentally retarded who may have additional disabling conditions such as 
cerebral palsy, autism, or a sensory impairment.

**Graduate Core Courses**

- ESSE 504 Medical Aspects of Disabling Conditions
- ESSE 617 Collaboration and Consultation for Students with Diverse 
Learning Needs
  *ESSE 628 Teaching Students with Severe Disabilities
  *ESSE 631 Developmental and Ecological Assessment Strategies
  *ESSE 633 Sensorimotor Development and Intervention Strategies
  *Requires a 45-hour practicum and passing scores on Praxis I.

**Endorsement Areas:** (choose one)

**Early Childhood Special Education**

- ESSE 569 Communication/Language Development and Intervention 
Strategies
  *ESSE 630 Teaching Preschoolers with Disabilities
  *ESSE 637 Infant/Family Intervention and Teamwork 
Elective
  *Requires a 45-hour practicum and passing scores on Praxis I.

**Severe Disabilities**

- ESSE 569 Communication/Language Development and Intervention 
Strategies
  *ESSE 621 Alternative Strategies for Managing Challenging Behavior
  *ESSE 623 Characteristics and Strategies for Teaching Students with 
Mental Retardation
  Elective
  *Requires a 45-hour practicum and passing scores on Praxis I.

**Special Education Licensure Only**

Many students who already possess an undergraduate degree enter 
Old Dominion University for the sole purpose of meeting Virginia’s teach-
ing licensure standards. When these students apply for admission into 
an approved teacher education program, they are considered to be “li-
censure only” candidates and must meet the college’s policy for admit-
ting students into an approved teacher education program. Admission to 
Old Dominion University does not guarantee admission into degree and/ 
or teacher preparation programs in the Darden College of Education. 
The special education licensure only option is available for those stu-
dents who wish to pursue endorsement in special education and do not 
meet the master’s degree admission requirements, or hold a conditional 
license in special education and wish to complete licensure requirements. 
The Special Education Teacher Licensure Only Program meets Virginia 
Department of Education certification and endorsement requirements for 
any one or more of the following five areas: learning disabilities, emo-
tional/behavioral disorders, mental retardation, early childhood special 
education and severe disabilities. Graduates find employment as spe-
cial education teachers within the continuum of services provided for 
children with special needs and may also serve as key members of child 
study teams; they are prepared to address the educational, emotional, 
and physical needs of students with disabilities.

**Admission, Continuance and Exit Requirements**

Regular admittance requires:

1. Admission to Old Dominion University as a non-degree seeking 
grantee;
2. Cumulative GPA of 2.75 for all college credit courses taken in the 
baccalaureate degree program;
3. Passing Praxis I or SAT score requirements as outlined by the 
Commonwealth of Virginia;
4. An interview and recommendation for admittance from a department 
representative, Teacher Education Services advisor, or site direc-
tor; and
5. Submission of an application for admittance into the Darden College 
of Education Teacher “Licensure Only” Program.

Provisional admittance requires:

1. Admission to Old Dominion University as a non-degree seeking 
grantee student;
2. Cumulative GPA of 2.50-2.74 for all college credit courses taken in 
the baccalaureate degree program;
3. Passing Praxis I or SAT score requirements as outlined by the 
Commonwealth of Virginia;
4. An interview and recommendation for admittance from a department representative, Teacher Education Services advisor, or site director; and
5. Submission of an application for admittance into the Darden College of Education Teacher’s Licensure Only Program. Continuation and exit requirements:
   1. Successful completion of all courses required for licensure in an endorsement area;
   2. Maintenance of a GPA of 3.0 with a B- or better in all course work;
   3. Passing scores on Praxis II prior to licensure if required by the Virginia Department of Education; and
   4. Computer literacy (transcript evidence of the successful completion of a basic computer course within two years of admission that demonstrates proficiency in the eight Educational Technology Standards for Instructional Personnel OR completion of ECI 304 or 530).

Mild Disabilities Licensure-only Core Requirements
ESSE 400/500 Foundations/Legal/Ethical Aspects in General and Special Education
ESSE 411/511 Behavior Management Techniques for Students with Disabilities
ESSE 413/513 Fundamentals of Human Growth and Development
ESSE 415/515 Instruction/Service Delivery for Educating Students with Mild Disabilities
ESSE 514 Psychoeducational Assessment for Students with Diverse Learning Needs
ESSE 530 The Family and Child with Special Needs: Lifespan Transitions
ESSE 568 Language Acquisition and Reading for Students with Diverse Learning Needs
ESSE 617 Collaboration and Consultation for Students with Diverse Learning Needs
ESSE 720 Curriculum and Instruction: Research into Practice
ECI 680 Reading to Learn Across the Curriculum

Mild Disabilities Licensure-only Endorsement Requirements
Emotional/Behavioral Disorders:
* ESSE 618 Characteristics and Strategies for Teaching Students with Emotional/Behavioral Disorders
  * Requires practicum of 45 hours and passing scores on Praxis I.
Learning Disabilities:
* ESSE 624 Characteristics and Assessment of Learning Disabilities
* ESSE 626 Instructional Strategies for Students with Learning Disabilities
  * Requires practicum of 45 hours and passing scores on Praxis I.
Mental Retardation
* ESSE 623 Characteristics and Strategies for Teaching Students with Mental Retardation

Internship
ESSE 586 Teacher Candidate Internship

Early Childhood Special Education/Severe Disabilities Licensure-only Core Requirements
ESSE 400/500 Foundations/Legal/Ethical Aspects in General and Special Education
ESSE 411/511 Behavior Management Techniques for Students with Disabilities
ESSE 413/513 Fundamentals of Human Growth and Development
ESSE 504 Medical Aspects of Disabling Conditions
ESSE 530 The Family and Child with Special Needs: Lifespan Transitions
ESSE 569 Communication/Language Development and Intervention Strategies or equivalent
ESSE 617 Collaboration and Consultation for Students with Diverse Learning Needs
ECI 680 Reading to Learn Across the Curriculum or equivalent

Early Childhood Special Education Licensure-only Endorsement Requirements
* ESSE 630 Teaching Preschoolers with Disabilities
* ESSE 631 Developmental and Ecological Assessment Strategies
* ESSE 633 Sensory Motor Development and Intervention Strategies
* ESSE 637 Infant/Family Intervention and Teamwork
  * Requires practicum of 45 hours and passing scores on Praxis I.

Internship
ESSE 586 Teacher Candidate Internship

Severe Disabilities Licensure-only Endorsement Requirements
ESSE 415/515 Instruction/Service Delivery for Educating Students with Mild Disabilities
* ESSE 631 Developmental and Functional Assessment Strategies
* ESSE 633 Sensorimotor Development and Intervention Strategies
* ESSE 628 Teaching Students with Severe Disabilities
* ESSE 637 Infant/Family Intervention and Teamwork
  * Requires practicum of 45 hours and passing scores on Praxis I.

Internship
ESSE 586 Teacher Candidate Internship

Minor in Special Education (15 hours)

Required courses are ESSE 400, 411, 413, 415 or 430 and ECI 304. (See full course names above.) For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement at Old Dominion University.

Undergraduate students who are interested in pursuing a master's degree in special education can meet the undergraduate content area and minor requirements through the Interdisciplinary Studies (IDS)-teacher preparation concentration in early childhood (PK-3) and special education emphasis. See the IDS section of this catalog or the web site for additional information, program requirements and curriculum of study: http://web.odu.edu/al/artsandletters/ids.

Guaranteed Entry Program

Undergraduate students will be automatically accepted into the graduate program in special education if they have met the following requirements:
1. 3.50 grade point average and 1100 SAT or 3.25 grade point average and 1180 SAT at the high school level.
2. A minimum 3.50 grade point average in undergraduate course work.
3. Permission of the special education faculty.
4. Passing scores on the Praxis I exam.

EDUCATIONAL CURRICULUM AND INSTRUCTION

Gary Morrison, Interim Chair

The Department of Educational Curriculum and Instruction (ECI) offers undergraduate and graduate programs for elementary, middle school, and secondary school teachers, and graduate programs for reading specialists, school library media specialists, and instructional technology educators. In addition the department supports the Ph.D. program in urban services with track courses. Due to changing University requirements, national accreditation standards, and state licensure regulations, the programs in teacher education are under constant revision. Students are encouraged to obtain current program information from the Darden College of Education Web site at: http://web.odu.edu/eci.

Teacher Education—Elementary (PreK-6)
Undergraduate/Graduate—Fifth-year Program for Initial Licensure

Program Requirements

Students who plan to teach in elementary schools (grades PreK-6) are required to pursue an undergraduate major in interdisciplinary studies (PreK-6 teacher education track) and complete a Bachelor of Science degree through the College of Arts and Letters, as well as a fifth year graduate program leading to a Master of Science in Education degree with a major in elementary education through the Darden College of Education. Please see the College of Arts and Letters section of this Catalog for baccalaureate degree requirements in interdisciplinary studies, teacher education track.

Following are Darden College of Education requirements for interdisciplinary studies majors who seek licensure to teach in elementary schools (grades PreK-6).
Admission, Continuance, and Exit Requirements

Admission to Undergraduate Teacher Education. Students must (1) have a general grade point average of 2.75 and a 2.75 in the academic major; (2) declare a major in interdisciplinary studies; (3) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment or approved SAT scores; and (4) submit to the director of the Office of Teacher Education Services and Advising an application form containing recommendations from faculty members familiar with their work. (These forms may be obtained in the Office of Teacher Education Services and Advising or in the Office of the Director of Interdisciplinary Studies.) No courses in the academic major in which the student has made below a C- will be accepted for admission in the Darden College of Education. Students must be formally admitted to teacher education and present passing Praxis I scores before taking ECI 436.

Undergraduate Continuance. Students must (1) maintain a general grade point average of 2.75 and a 2.75 in the academic major; (2) pass the University Exit Examination of Writing Proficiency; and (3) complete all degree requirements for the major in interdisciplinary studies, teacher education track. No courses in the academic major or professional education in which the student has made below a C- will be accepted for continuance in the College of Education.

Graduate Admission. For admission to the graduate portion of this program, students must (1) have a Bachelor of Science degree through the College of Arts and Letters in interdisciplinary studies, teacher education (PreK-6) track; (2) have a general grade point average of 2.80; (3) have been admitted to undergraduate teacher education (see above requirements); (4) take and receive satisfactory scores on either the Graduate Record Examination (score of 900 combined on verbal and quantitative with a minimum of 400 verbal for regular admission) or the Miller Analogies Test (score of 45 for regular admission); and (5) submit an application for graduate studies.

Graduate Continuance. Students must (1) maintain a graduate grade point average of 3.00; (2) maintain a grade point average of 3.00 in the major; (3) pass Praxis II and receive a B or better in ESSE 679 prior to teacher internship (passing scores must be attached to the teacher internship application); and (4) take the Virginia Reading Assessment and pass the test when passing scores are provided.

Graduate Exit. To obtain a Master of Science in Education degree with a major in elementary education, students must (1) have a general grade point average of 3.00 in all course requirements of the fifth year; (2) pass a comprehensive examination; (3) successfully complete prescribed student teaching experiences; (4) have an exit interview through the Office of Teacher Education Services; and (5) have completed all course requirements; and (6) submit an application for graduation.

Professional Education Requirements of the Undergraduate Interdisciplinary Studies Program Leading to Elementary Education Licensure, Grades Pre-K-6 (Academic undergraduate requirements are listed under Interdisciplinary Studies in the College of Arts and Letters.)

<table>
<thead>
<tr>
<th>Junior I</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301 Foundations of Education</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 432 Instructional Strategies: Language Arts</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 433 Instructional Strategies: Mathematics</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 304 Educational Applications of Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESI 406, 413 Fundamentals of Human Growth &amp; Development</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 468 Language Acquisition and Reading for Students with Diverse Learning Needs</td>
<td>3 credits</td>
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<tr>
<td>Senior I</td>
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</tr>
<tr>
<td>ECI 301 Foundations of Education</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 304 Educational Applications of Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 468 Language Acquisition and Reading for Students with Diverse Learning Needs</td>
<td>3 credits</td>
</tr>
<tr>
<td>Senior II</td>
<td></td>
</tr>
<tr>
<td>ECI 301 Foundations of Education</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 304 Educational Applications of Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 468 Language Acquisition and Reading for Students with Diverse Learning Needs</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

Master of Science Degree Requirements for Fifth-Year Licensure Program, Elementary Education, Grades PreK-6

This program is designed for prospective teachers who have completed the undergraduate program in teacher education (PreK-6) offered by the Department of Interdisciplinary Studies in the College of Arts and Letters. Satisfactory Praxis I scores must be submitted before enrolling in practicum (ESSE 679). All methodology courses must be completed before a student takes ECI 668.

Graduate I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ESI 506 Special Needs Student in the Regular Classroom</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 542 Children's Literature across the Curriculum, PK-6</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 690 Child and Family</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 677 Advanced Child Theory</td>
<td>3 credits</td>
</tr>
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</table>

Graduate II

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 679 Advanced Techniques of Child Management</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 680 Reading to Learn Across the Curriculum or ECI 683 Diagnostic Teaching of Reading in the Classroom</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 619 Classroom Research and Assessment in C &amp; I</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

Graduate III

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 668 Student Teaching</td>
<td>9 credits</td>
</tr>
</tbody>
</table>

Teacher Education, Secondary Undergraduate Programs

Program Requirements

Students who wish to teach any of the disciplines listed below in secondary schools must pursue courses of study leading to baccalaureate degrees in either the College of Arts and Letters or the College of Sciences. (See either the College of Arts and Letters or the College of Sciences section of this Catalog for full and specific requirements in any prospective teaching subject in secondary education.) In addition, to be eligible for state licensure to teach in secondary schools, students must complete requirements (listed below by subject area) in the Darden College of Education.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) have a general grade point average of 2.75 and a 2.75 in the academic major; (2) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment or the SAT; (3) have an interview, scheduled through Teacher Education Services; and (4) submit to the director of teacher education services an application form containing recommendations from two faculty members familiar with their work. (These forms may be obtained either in the Office of Teacher Education Services or in the appropriate chair’s office in either the College of Arts and Letters or the College of Sciences.) No courses in the academic major or professional education in which the student has made below a C- will be accepted for admission in the Darden College of Education. Students should be formally admitted to teacher education before taking ECI 451, 453, 454, or 455.

Continuance. Students must (1) maintain a general grade point average of 2.75 and a 2.75 in the academic major; (2) successfully complete ECI 501 and a subsequent practicum; (3) be approved for teacher internship by the faculty; and (4) pass Praxis II in order to participate in the teacher internship. Passing scores must be attached to the teacher internship application.

Exit. Students must (1) have a general grade point average of 2.75 and a 2.75 in the academic major; (2) successfully complete prescribed student teaching experiences; (3) have an exit interview through the Office of Teacher Education Services; and (4) have completed all course requirements. No courses in the academic major in which the student has made below a C- will be accepted toward meeting requirements in the College of Education.

Professional Education Course Requirements—Secondary

Art Education

(3 credits)

(Dance Education)

(3 credits)

English Education

(3 credits)
Foreign Language Education
This program leads to Licensure to teach French, German, and/or Spanish. Students wanting to be certified to teach a foreign language must have a grade point average of at least 2.75 in the language and are strongly encouraged to participate in a structured learning experience in a country where the language is spoken. No course in the language with a grade lower than C (2.00) grade will be counted toward the degree or toward the number of credits required for student teaching. Students must also receive passing scores on language proficiency exams before they are approved for a student teaching assignment.
ECI 301, 304, 360, 408, 485; ESSE 406, 413; and FL 301, 452, 456.

Geography Education
ECI 301, 304, 360, 408, 455, 485; ESSE 406, 413.

Government Education
ECI 301, 304, 360, 408, 455, 485; ESSE 406, 413.

History/Social Sciences Education
ECI 301, 304, 360, 408, 455, 485; ESSE 406, 413.

Mathematics Education
ECI 301, 304, 360, 408, 453, 485; ESSE 406, 413.

Music Education
(This program leads to Licensure K-12)
ECI 301, 360, 408, 485; ESSE 406, 413; and MUSC 401, 402, 403, 404 (vocal) or MUSC 405, 406, 407, 408 (instrumental).

Science Education (Biology, Chemistry, Earth Science, Physics)
ECI 301, 304, 360, 408, 454, 485; ESSE 406, 413

Theatre Education
(This program leads to Licensure K-12)
ECI 301, 304, 360, 408, 485; ESSE 406, 413

Add-on Endorsements
Add-on endorsements are available in algebra I, computer science, English as a second language, journalism, and most other grade 6-12 areas. For information, please contact the Office of Teacher Education Services.

Master of Science in Education—Elementary
Dean Cristol, Graduate Program Director

Within the Master of Science in Education-Elementary degree program, there are a number of programs for both licensed teachers as well as those seeking initial licensure in PreK-6, middle school, or school librarianship, K-12.

Elementary/Middle School Programs for Licensed Teachers

The following programs are for students who are licensed as teachers and who wish to enter a degree program leading to the Master of Science in Education degree with a major in elementary/middle education or one of the following emphasis areas: general elementary/middle school education, endorsement for school library/media, elementary/middle science, or elementary/middle school instructional technology. Nondegree students intending to enter this graduate program must meet with the elementary/middle school graduate program director upon completion of no more than six graduate credits.

Graduate programs associated with this major and its optional emphasis areas are intended to meet the needs of the individual student. Program options are designed to accomplish three primary goals: (1) to enhance classroom instruction by enriching the knowledge and skills of practicing teachers; (2) to train and encourage classroom teachers to conduct in-school research so that significant findings in the learning-teaching process can be applied to the classroom situation; and (3) to permit teachers to upgrade their teaching credentials to the Postgraduate Professional License level or to add a library/media endorsement.

Curricula for the programs include specific courses in teaching in most of the major content areas: mathematics, science, social studies, and language arts. Each individualized program has three component areas: (1) core, (2) support; and (3) research. The research component may have up to three options (thesis, problem paper, or seminar) as indicated for each program option.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor’s degree; (2) hold the Virginia Collegiate Professional License or an equivalent license from another state for elementary or middle school education; (3) have a general undergraduate grade point average of 2.80; (4) take and receive satisfactory scores on either the Graduate Record Examination (score of 900 combined on verbal and quantitative with a minimum of 400 verbal for regular admission) or Miller Analogies Test (score of 45 for regular admission); (5) have an interview with the graduate program director; and (6) apply for admission to graduate school. Performance in classes taken as a non-degree student will not be taken into consideration in the admission process. Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for elementary/middle education.

Continuance. Students must (1) maintain a grade point average of 3.00 and (2) maintain a grade point average of 3.00 in the major.

Exit. Students must (1) have a 3.00 grade point average; (2) have a 3.00 grade point average in the major; (3) pass a written comprehensive examination; (4) have an exit interview; (5) have completed all course requirements; and (6) submit an application for graduation.

Program Requirements

Since students are expected to be dedicated to the goal of becoming master teachers, evidence that a student has reached this goal must be presented before graduation is certified. A minimum of 31 semester credits of course work is required for programs in elementary/middle school education.

After admission to provisional or regular degree status, or before the completion of six credits as a nondegree student, the student must meet with the graduate program director who will assign a permanent advisor from the graduate faculty of the Darden College of Education. It is the responsibility of the student to confer with the assigned advisor for the purpose of developing a program of study. Each program has a core, support and research area that may, in some instances, be tailored to fit individual needs. Listed below are possible programs of study.

Master of Science in Education—Elementary

Program: Elementary/Middle School—General

Core: (12 credits)
ECI 530 Instructional Technology and the Classroom 3 credits
Taken within five years or waived through examination
ECI 683 Diagnostic Teaching of Reading 3 credits
Instructional Strategies classes or other courses based on teaching specialties 6 credits

Support beyond the core: (6 to 12 credits)
Classes to be selected in consultation with the student’s advisor or program director

Research courses (7 to 13 credits)

a. Thesis option (10-13 credits; 34 credits required for graduation)
ECI 600 Introduction to Graduate Research 1 credit
ECI 635 Research Methods In Education 3 credits
ECI 698 Thesis 3-6 credits
ELS 732 Statistics Applied to Research in Education 3 credits
b. Problem paper option (7 credits; 31 credits required for graduation)
ECI 600 Introduction to Graduate Research 1 credit
ECI 635 Research Methods In Education 3 credits
ECI 636 Problems in Education 3 credits
c. Seminar option (13 credits; 37 credits required for graduation)
ECI 600 Introduction to Graduate Research 1 credit
ECI 635 Research Methods In Education 3 credits
ECI 639 Seminar in Education 3 credits
Electives 6 credits

DARDEN COLLEGE OF EDUCATION 147
Elementary—Library Science/Media K-12—Endorsement Plus Master’s

Katherine Bucher, Director

This endorsement program leads to licensure as a school librarian (K-12) for individuals who already have licensure as a teacher.

Core (25 credits)

- **ECI 602** Production of Instructional Materials 3 credits
- **ECI 605** Selection and Utilization of Nonbook Media 3 credits
- **ECI 675** Administration, Management and Evaluation of Libraries 3 credits
- **ECI 676** Library Media Services and the Curriculum 3 credits
- **ECI 677** Technical Services in Libraries 3 credits
- **ECI 678** Selection, Evaluation and Utilization of Materials NK-12 4 credits
  - Prerequisite: ECI 443/543 or ECI 642 or equivalent
- **ECI 679** Reference and Information Retrieval 3 credits
- **ECI 586** Student Teaching for Special Endorsement 3 credits
  - Taken after the completion of all library core courses

Support (3-9 elective credits): Prerequisites for the core area may be counted as support courses. These courses must be selected in consultation with the graduate program director or advisor.

Research core (7-13 credits)

- Thesis option (10-13 credits; 41 credits required for graduation)
  - **ECI 600** Introduction to Graduate Research 1 credit
  - **ECI 635** Research Methods in Education 3 credits
  - **ECI 698** Thesis 3-6 credits
  - **ELS 732** Statistics Applied to Research in Education 3 credits
  - Problem paper option (7 credits; 38 credits required for graduation)
    - **ECI 600** Introduction to Graduate Research 1 credit
    - **ECI 635** Research Methods in Education 3 credits
    - **ECI 636** Problems in Education 3 credits

Master of Science in Education—Elementary

Elementary/Middle School—Science

This emphasis is for licensed teachers who wish to expand their education in science. Thirty-one credits are required for graduation.

Core (16-18 credits required)

- **ECI 530** Instructional Technology and the Classroom 3 credits
- **ECI 654** Developing Instructional Strategies in Science (one or more of the following) 3 credits
- **ECI 654** Science in the Elementary/Middle School
- **ECI 554** Developing Instructional Strategies in Science
- **ECI 534** Developing Instructional Strategies PreK-6: Science

Science courses 10 to 12 credits

Science courses must have a science department prefix and be approved by the student's science education advisor.

Support Courses: (6-8 credits)

Selected in consultation with the advisor and/or graduate program director.

Research (7 credits): Problems paper

- **ECI 600** Introduction to Graduate Research 1 credit
- **ECI 635** Research Methods in Education 3 credits
- **ECI 636** Problems in Education 3 credits

Master of Science in Education—Elementary

Elementary/Middle School—Instructional Technology

Richard Overbaugh, Director

In the emphasis in elementary/middle school - instructional technology, the core and support courses are combined, with students selecting 24 to 30 credits in instructional technology along with the problem paper or seminar research option. Working with an assigned advisor, students may take courses in the areas of distance education/telecommunications, instructional design and development, educational applications of instructional technology, and administration of instructional technology.

Program Requirements

Core: (24-30 hours chosen from courses below with the advisor’s or graduate program director’s approval in advance)

- **ECI 530** Instructional Technology and the Classroom 3 credits
- **ECI 634** Microcomputer Hardware Systems in Education 3 credits
- **ECI 651** Software Evaluation and Curriculum Integration 3 credits
- **ECI 731** Media Trends in Education 3 credits
- **ECI 732** Visual Communication and Design 3 credits
- **ECI 749** Instructional Systems Design 3 credits
- **ECI 665** Digital Video Materials Development 3 credits
- **ECI 761** Applied Instructional Design 3 credits
- **ECI 734** Advanced Instructional Design 3 credits
- **ECI 646** Distance Education 3 credits
- **ECI 647** Online Learning 3 credits
- **ECI 748** Assessment and Evaluation 3 credits

Support courses

Graduate electives approved by the graduate program director may be substituted for technology classes when those courses complement personal and professional goals.

Research Courses (7-13 credits)

Problem Paper Option (7 credits; 31 credits required for graduation)

- **ECI 600** Introduction to Graduate Research 1 credit
- **ECI 635** Research Methods in Education 3 credits
- **ECI 636** Problems in Education 3 credits

Seminar Option (13 credits; 37 credits required for graduation)

- **ECI 600** Introduction to Graduate Research 1 credit
- **ECI 635** Research Methods in Education 3 credits
- **ECI 636** Problems in Education 3 credits

Electives 6 credits

Library Science Licensure/Endorsement for Licensed Teachers

An individual holding a valid Virginia teaching license may obtain an endorsement as a school library media specialist (K-12) by completing a specialized core of courses as part of the Master of Science in Education in either elementary/middle or secondary education or by completing the courses as a non-degree student for endorsement only. The core classes for this K-12 endorsement are listed under Elementary/Middle School—Library Science/Media.

Master of Science in Education—Elementary

Library Science K-12 Initial Licensure

An initial licensure program as a school library media specialist for people with a non-teaching B.S. or B.A. is offered as part of the Master of Science in Education - Elementary/Middle Education. In that program, students who do not have teacher licensure but who are seeking licensure as a school librarian (K-12) and a master's degree in education will complete professional studies courses in addition to a prescribed set of library media courses and a research core. The minimum number of graduate credits for the program is 43 with some additional undergraduate requirements.
Admission, Continuance, Exit Requirements

Admission. Students must (1) hold a bachelor's degree from an accredited institution; (2) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment; (3) have a general undergraduate grade point average of 2.80; (4) take and receive satisfactory scores (as established by the ECI Department) on either the Graduate Record Examination (score of 900 combined on verbal and quantitative with a minimum of 400 verbal for regular admission) or Miller Analogies Test (score of 45 for regular admission); (5) have an interview with the graduate program director; and (6) submit an application for graduate studies. Performance in classes taken as a non-degree student will not be taken into consideration in the admission process. No courses in the undergraduate academic major or professional education courses in which the student has made below a C- will be accepted toward licensure in the College of Education.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for elementary/middle education.

Continuance. Students must (1) maintain a graduate grade point average of 3.00, and (2) maintain a grade point average of 3.00 in the major.

Exit. Students must (1) have a 3.00 grade point average; (2) pass a written comprehensive examination; (3) successfully complete student teaching; (4) have an exit interview; (5) have completed all course requirements; and (6) submit an application for graduation. No courses in the academic major or professional education in which the student has made below a C- will be accepted toward licensure requirements in the College of Education.

Prerequisites. Individuals entering this graduate program must already possess a bachelor's degree with classes which satisfy the Commonwealth of Virginia requirements in the liberal arts and sciences, and must pass the professional teacher's assessment requirement (currently Praxis I) prescribed by the Virginia Board of Education. Transcripts will be evaluated by the education advisor to determine whether the academic requirements have been met by previous coursework or whether additional undergraduate courses are needed to satisfy the academic content requirements of the Commonwealth of Virginia. No courses in the academic major or professional education in which the student has made below a C- will be accepted toward licensure requirements in the College of Education.

Professional Education (23 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECI 301</td>
<td>Social and Cultural Foundations of Education</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 5xx</td>
<td>Instructional Strategies in a discipline:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one: 532=Language Arts; 533=Math;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>534=Science, 535=Social Studies</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 530</td>
<td>Instructional Technology and the Classroom</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>Taken within five years or waived through</td>
<td></td>
</tr>
<tr>
<td></td>
<td>examination</td>
<td></td>
</tr>
<tr>
<td>ECI 561</td>
<td>Reading in the Content Area (or ECI 680)</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 436</td>
<td>Classroom Management and Practicum</td>
<td>2 credits</td>
</tr>
<tr>
<td>ESSE 513</td>
<td>Human Growth and Development</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 485</td>
<td>Student Teaching</td>
<td>6 credits</td>
</tr>
</tbody>
</table>

Library Science (25 credits) (Taken after at least 12 credits of professional education have been completed)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 543</td>
<td>Literature for Children &amp; Young Adults</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 642</td>
<td>Children's Literature Across the Curriculum</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 602</td>
<td>Production of Instructional Materials</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 605</td>
<td>Selection and Utilization of Nonbook Media</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 675</td>
<td>Administration, Management and Evaluation of</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>Libraries</td>
<td></td>
</tr>
<tr>
<td>ECI 676</td>
<td>Library Media Services and the Curriculum</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 677</td>
<td>Technical Services in Libraries</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 678</td>
<td>Selection, Evaluation and Utilization of Materials</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: ECI 443/543 or ECI 642 or equivalent</td>
<td>4 credits</td>
</tr>
<tr>
<td>ECI 679</td>
<td>Reference and Information Retrieval</td>
<td>3 credits</td>
</tr>
<tr>
<td>Research (7 credits) Problems paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECI 600</td>
<td>Introduction to Graduate Research</td>
<td>1 credit</td>
</tr>
</tbody>
</table>

Master of Science in Education—Elementary

State Initial Licensure Program (PreK-6)

This licensure/master's program in elementary school education (PreK-6) is designed for prospective teachers wanting to obtain licensure as a teacher in preschool through grade six and a master's degree at the same time. It is open to students who have a non-teaching B.S. or B.A. degree.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor's degree from an accredited institution; (2) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment; (3) have a general grade point average of 2.80; (4) take and receive satisfactory scores on either the Graduate Record Examination (score of 900 combined on verbal and quantitative with a minimum of 400 verbal for regular admission) or Miller Analogies Test (score of 45 for regular admission); and (5) have an interview with the graduate program director. Performance in classes taken as a non-degree student will not be taken into consideration in the admission process. No courses in the undergraduate academic major or professional education in which the student has made below a C- will be accepted for licensure in the Darden College of Education.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for elementary/middle education.

Continuance. Students must (1) maintain a grade point average of 3.00, (2) maintain a grade point average of 3.00 in the major, and (3) pass Praxis II and receive a B or better in ESSE 679 prior to teacher internship. Passing scores must be attached to the teacher internship application.

Exit. Students must (1) have a 3.00 grade point average; (2) pass a written comprehensive examination; (3) successfully complete student teaching; (4) have an exit interview; (5) have completed all course requirements; (6) submit an application for graduation; and (7) pass Praxis II prior to licensure. No courses in the undergraduate academic major in which the student has made below a C- will be accepted toward licensure requirements in the College of Education.

Program Requirements

Prerequisites. Individuals entering this graduate program must already possess a bachelor's degree with classes which satisfy the Commonwealth of Virginia requirements in the liberal arts and sciences and must pass the professional teacher's assessment requirement (currently Praxis I) prescribed by the Virginia Board of Education. Liberal arts and sciences course work must fulfill the following requirements. No courses in the academic major or professional education in which the student has made below a C- will be accepted toward licensure requirements in the College of Education.

1. English (must include composition, oral communication, and literature): 12 semester credits
2. Mathematics: 12 semester credits
3. Science (including a laboratory course): 12 semester credits
4. History (must include American history and world history): 9 semester credits
5. Social science (must include geography and economics): 6 semester credits
6. Arts and humanities: 6 semester credits
7. Computer/technology: 3 semester credits (satisfied by ECI 304)

Transcripts will be evaluated by the education advisor to determine whether these academic requirements have been met by previous course work. Experiential learning credit may be available for non-academic work.

Prerequisite Undergraduate Professional Education Classes:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301</td>
<td>Foundations of Education including observation</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 304</td>
<td>Educational Applications of Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 406</td>
<td>Special Needs Student in the General</td>
<td></td>
</tr>
</tbody>
</table>
Master of Science in Education—Elementary

Middle School (Grades 6-8) Initial State Licensure

This licensure/master’s program in middle school education (grades 6-8) is designed for prospective teachers wanting to obtain an initial middle school teaching licensure and a master’s degree at the same time. Open to students who have a non-teaching B.S. or B.A. degree, the program requires students to take courses which meet the Commonwealth of Virginia’s stated academic competency requirements and leads to two undergraduate endorsement areas [mathematics (21 credits minimum), English (21 credits minimum), science (21 credits minimum), or social studies (21 credits minimum)]. An additional 33 credits of education courses are taken at the graduate level. Advisors in the Office of Teacher Education Services will evaluate an individual’s undergraduate transcript to determine which, if any, undergraduate academic content courses are needed to meet state requirements for licensure. No courses in the academic major or professional education classes in which the student has made below a C- will be accepted toward licensure in the Darden College of Education.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor's degree from an accredited institution in the liberal arts and sciences (or equivalent) including a minimum of 21 semester hours (which meet Virginia’s stated coursework competencies) in two areas of concentration (English, mathematics, science, and history/social science) which will be listed on the license; (2) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment or approved SAT scores; (3) have a general grade point average of 2.80; (4) achieve satisfactory scores on either the Graduate Record Examination (score of 900 combined on verbal and quantitative with a minimum of 400 verbal for regular admission) or Miller Analogies Test (score of 45 for regular admission); (5) have an interview with the graduate program director; and (6) submit an application for graduate studies. Performance in classes taken as a non-degree student will not be taken into consideration in the admission process. No courses in the academic major or professional education in which the student has made below a C- will be accepted for admission in the Darden College of Education.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for elementary/middle education.

Continuance. Students must (1) maintain a grade point average of 3.00, (2) maintain a grade point average of 3.00 in the major, and (3) pass PRAXIS II and receive a B or better in practicum prior to teacher internship. Passing scores must be attached to the teacher internship application.

Exit. Students must (1) have a 3.00 grade point average; (2) pass a written comprehensive examination; (3) successfully complete student teaching; (4) have an exit interview; (5) have completed all course requirements; and (6) submit an application for graduation. No courses in the academic major or professional education in which the student has made below a C- will be accepted toward licensure requirements in the Darden College of Education.

Program Requirements

Students seeking initial licensure plus a master's degree in middle school education (grades 6-8) must meet the academic concentration requirements (item 1) in two of the following specialties and the general academic concentration requirements (item 2) in the other two with a minimum grade of a C-. Transcripts will be evaluated by the education advisor to determine whether these academic requirements have been met by previous course work. Experiential learning credit may be available for non-academic work.

English

(1) English concentration [must include course work in language (e.g., history, structure, grammar); literature; advanced composition; and interpersonal communication or speech]; 21 semester hours.

(2) Individuals seeking endorsement in middle education 6-8 without an English concentration must have completed 12 semester hours in English.

Mathematics

(1) Mathematics concentration (must include course work in algebra, geometry, probability and statistics, and applications of mathematics); 21 semester hours.

(2) Individuals seeking endorsement in middle education 6-8 without a mathematics concentration must have completed a minimum of six semester hours in mathematics.

Science

(1) Science concentration (must include courses in each of the following: biology, chemistry, physics, and earth and space science; a laboratory course is required in two of the four areas); 21 semester hours.

(2) Individuals seeking endorsement in middle education 6-8 without a science concentration must have completed a minimum of six semester hours in science for a total of 15 semester hours in mathematics and science.

History/Social Science

(1) History/social science concentration (must include American history, world history, economics, geography, international affairs, and current events); 21 semester hours.

(2) Individuals seeking endorsement in middle education 6-8 without a history/social science concentration must have completed a minimum of six semester hours in history and a minimum of six semester hours in social science for a total of 15 semester hours in history and social science.

Prerequisite Classes: 12 credits [Some may be satisfied as part of undergraduate degree]

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 301</td>
<td>Foundations of Education including observation, 30 hours.</td>
<td>3 credits</td>
</tr>
<tr>
<td>ECI 304</td>
<td>Educational Applications of Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 468</td>
<td>Language Acquisition and Reading for Students with Diverse Learning Needs</td>
<td>3 credits</td>
</tr>
<tr>
<td>ESSE 413</td>
<td>Fundamentals of Human Growth &amp; Development</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

Graduate Professional Education [33 graduate credits]

Graduate I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 506</td>
<td>Special Needs Student in the General Education Classroom</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

Two of the following to correspond with two areas of academic concentration (4 credits each)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 551</td>
<td>Instructional Strategies for Teaching English in Middle/High Schools</td>
<td>8 credits</td>
</tr>
<tr>
<td>ECI 553</td>
<td>Instructional Strategies for Teaching Mathematics in Middle/High Schools</td>
<td>8 credits</td>
</tr>
</tbody>
</table>
ECE 554 Instructional Strategies for Teaching Science in Middle/High Schools
ECE 555 Instructional Strategies for Teaching Social Studies in Middle/High Schools

Graduate II
ECE 680 Reading to Learn Across the Curriculum or ECE 683 Diagnostic Teaching of Reading 3 credits
ECE 642 Children's Literature across the Curriculum 3 credits
ECE 615 Teaching in the Middle School 4 credits
ECE 619 Classroom Research and Assessment 3 credits

Graduate III
ECE 666 Teacher Internship in the Middle Grades 6-8 9 credits

Master of Science in Education—Reading Education
Charlene Fleener, Graduate Program Director

The program is designed to provide professional training for prospec-
tive reading specialists and elementary- and secondary-level reading
teachers, Grades K-12.

Extensive course offerings permit the graduate student to pursue an
area of interest, such as elementary school reading, secondary school
reading, college reading, and reading in clinical settings. As a culminat-
ing experience, each student investigates a problem area and prepares
a formal research paper on a topic of interest.

Student study may include an intensive search of the professional
literature on reading or selected field experiences in public, private, or
governmental reading programs that provide reading services to clients.
In addition, students tutor children and aid in the diagnosis and
remediation of reading problems. Students who have three years of sat-
isfactory experience in teaching reading and who have completed the
entire degree program may obtain the reading specialist endorsement.

Non-degree students intending to enter this graduate program must meet
with the reading education graduate program director upon completion
of no more than six graduate credits.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor's degree; (2) hold the
Virginia Collegiate Professional License or an equivalent license from an-
other state; (3) have an undergraduate grade point average of 2.80 and an
average of 3.00 in the major; (4) achieve a satisfactory score (as estab-
lished by the ECI Department) on the Graduate Record Examination or the
Miller Analogies Test; (5) have an interview with the graduate program di-
rector; (6) have had three semester credits in reading courses at the under-
graduate level; and (7) submit an application for graduate studies.

Performance in classes taken as a non-degree student will not be taken into
consideration in the admission process. Under certain circumstances, ap-
licants who do not fully meet the requirements for regular admission to the
program may be admitted on a provisional basis subject to conditions speci-
fied by the graduate program director for reading education.

Continuance. Students must (1) maintain a grade point average of
3.00 and (2) maintain a grade average of 3.00 in the major.

Exit. Students must (1) have a 3.00 grade point average; (2) have a
3.00 grade point average in the major; (3) pass a written comprehensive
examination; (4) have an exit interview; (5) have completed all course
requirements; (6) submit an application for graduation; and (7) complete
the Virginia Reading Assessment.

Program Requirements

A minimum of 33 semester credits is required for the master’s degree
in reading education. The degree candidate must successfully pass a
comprehensive examination, usually taken in the last semester of the
program.

Course requirements for completion of the degree program are listed below.

Area I: Core [24 credits] (The following is the suggested sequence for these courses)
ECE 689 Survey of Reading Instruction 3 credits
ECE 680 Reading to Learn Across the Curriculum 3 credits
ECE 683 Diagnostic Teaching of Reading in the Classroom 3 credits
ECE 686 Language Development and Reading 3 credits

Area II: Support [6 credits]
ECE 635 Research Methods in Education 3 credits
ECE 637 Contemporary Issues in Reading Research 3 credits

Area III: Research [3 credits] - In consultation with the following
with the graduate program director, select from the following or other
approved courses.
ECE 652 Methods and Materials in Language Arts 3 credits
ECE 543 Literature for Children and Young Adults 3 credits
ECE 695 Topics: Multicultural Children's Literature 3 credits

Note: There is also a thesis option whereby the student omits ECE 637
and takes ECE 695 as well as ECE 698-699.

Master of Science in Education—Secondary

Robert A. Lucking, Graduate Program Director

Within the Master of Science in Education—Secondary degree program,
there are a number of programs for both licensed teachers as well as
those seeking initial licensure in grades 6-12.

Secondary Programs for Licensed Teachers

The graduate programs in secondary education are designed for li-
ensed teachers to improve and update professional competency in
teaching at the secondary level. Licensed teachers completing the pro-
gram enhance their ability to teach effectively and to participate in edu-
cational research in their schools. Completion of requirements leads to
upgrading of the teaching license to the Postgraduate Professional level.
Library endorsement for licensed teachers may be obtained in this pro-
gram. Non-degree students intending to enter this graduate program must
meet with the secondary education graduate program director upon
completion of no more than six graduate credits.

Master of Science in Education—Secondary

General Major for Licensed Teachers

The general secondary education major for licensed teachers includes
interest areas in computer applications in education, instructional de-
sign and technology, general vocational education, library science/me-
dia, and music education. A special library science program provides
endorsement as a school librarian (K-12) within the master’s degree pro-
gram for licensed teachers. Other programs may be individually designed as
students’ needs dictate.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor’s degree; (2) hold the
Virginia Collegiate Professional License or an equivalent license from an-
other state; (3) have an undergraduate grade point average of 2.80 and an
average of 3.00 in the major; (4) achieve a satisfactory score (as estab-
lished by the ECI Department) on the Graduate Record Examination or the
Miller Analogies Test; (5) have an interview with faculty in the program; and (6)
have completed the Graduate Record Examination (score of 900 combined on verbal and quantitative
for regular admission) or Miller Analogies Test (score of 45 for regular
admission); (5) have an interview with faculty in the program; and (6)
submit an application for admission. Performance in classes taken as a
non-degree student will not be taken into consideration in the admission process. Under certain circumstances, applicants who do not fully meet
the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate
program director for secondary education.

Continuance. Students must (1) maintain a grade point average of
3.00 and (2) maintain a grade point average of 3.00 in the major.

Exit. Students must (1) have a 3.00 grade point average; (2) have a
3.00 grade point average in the major; (3) pass a written comprehensive
examination; (4) have an exit interview; (5) have completed all course
requirements; and (6) apply for graduation.
General Program Requirements

Students enrolled in secondary and general secondary programs are expected to be dedicated to the goal of becoming master classroom teachers or librarians; therefore, evidence that a student has reached this goal must be presented before graduation is certified. A minimum of 31 semester credits is required for completion of any program planned. If a graduate student elects to add other goals to the program, such as becoming a secondary education supervisor, then the program may require an additional nine to 12 credits beyond the 31-hour minimum.

Students must select one of the following options as a means of fulfilling the degree requirements: (1) a thesis option, which requires a minimum of 34 semester credits, (2) a problems paper option, which requires a minimum of 31 semester credits, or (3) a seminar option, which requires a minimum of 37 credits. Listed below are the core requirements for each option:

**Thesis option**
- ECI 600 Introduction to Graduate Research (1 credit)
- ECI 635 Research Methods In Education (3 credits)
- ECI 698 Thesis (3-6 credits)
- ELS 732 Statistics Applied to Research in Education (3 credits)

**Problem paper option**
- ECI 600 Introduction to Graduate Research (1 credit)
- ECI 635 Research Methods In Education (3 credits)
- ECI 636 Problems in Education (3 credits)

**Seminar option**
- ECI 600 Introduction to Graduate Research (1 credit)
- ECI 635 Research Methods In Education (3 credits)
- ECI 639 Seminar in Education (3 credits)
- Electives (6 credits)

After admission to provisional or regular degree status, each student is assigned a permanent advisor from the Darden College of Education’s graduate faculty. It is the student’s responsibility to confer with the assigned advisor. The advisor will be well acquainted with the emphasis area the student has chosen and will be responsible for helping the student develop a program of study that best meets the student’s needs. This proposed program of study becomes the student’s graduate program upon approval of the graduate program director, and can be changed only with the advice and consent of both the faculty advisor and the student. Because of the individualized nature of graduate programs in secondary education, good working relationships between faculty advisors and students are essential.

Graduate programs in the secondary education and general secondary education majors are administered by the Departments of Educational Curriculum and Instruction and Occupational and Technical Studies.

**Emphasis Areas**

In the secondary school - general program, emphases are offered in biology, chemistry, English, mathematics, instructional technology, economics, history, and social studies education. A general emphasis is also available with interest areas including industrial arts, library science/media, and music as well as individually designed programs.

**Area I:** Core: 12 to 18 credits.
**Area II:** Support: 12 to 18 credits.
**Area III:** Research: 7 to 13 credits. Students must select the thesis option, problem paper option, or seminar option as described under General Program Requirements.

For requirements in the music education interest area, refer to the Music section in the College of Arts and Letters.

**Master of Science in Education—Secondary**

**Instructional Design and Technology**

Richard C. Overbaugh, Director

The instructional design and technology concentration is designed to meet the needs of professionals interested or involved in the design, development and delivery of instruction. The courses are appropriate for a variety of venues, including preK-12, military, and business. In this specialization, students select 24 to 30 credits in instructional technology plus the problems paper or seminar research option. Working with an advisor, students select courses that complement their backgrounds and professional goals.

All courses in the core and elective blocks plus ECI 635/636 will be offered in distributed format, via VTEL, Virtual Classroom, or asynchronously.

**Problem Paper Option:** Area I (24 hours); Area II (7 hours); 31 hours total
**Seminar Option:** Area I (30 hours); Area II (7 hours); 37 hours total

**Area I: Emphasis Courses (24 - 30 hours chosen from the following courses)**

**Skills Courses**
- ECI 575 Web Development for Educators
- ECI 634 Microcomputer Hardware Systems in Education
- ECI 648 Digital Media for Educators

**Core Courses**
- ECI 617 Foundations of Instructional Technology
- ECI 660 Cognition and Instructional Design
- ECI 749/849 Instructional Systems Design
- ECI 761/861 Applied Instructional Design

**Elective Courses**
- ECI 646 Distance Education
- ECI 647 Online Learning
- ECI 731/831 Media Trends in Education
- ECI 732/832 Visual Communication and Design
- ECI 734/834 Advanced Demonstration Seminar in Instructional Design and Technology
- ECI 748/848 Assessment and Evaluation

Graduate electives approved by the graduate program director may be substituted when those courses complement personal and professional goals.

**Area II: Research Core Courses Required**

**Problem Paper Option (31 graduate hours)**
- ECI 600 Introduction to Graduate Research in Curriculum & Instruction (1 hour)*
- ECI 635 Research Methods in Education (3 hours)
- ECI 636 Problems in Education (3 hours)
- Seminar Option (37 graduate hours)
- ECI 600 Introduction to Graduate Research in Curriculum & Instruction (1 hour)*
- ECI 635 Research Methods in Education (3 hours)
- ECI 639 Seminar in Education (3 hours)

* Should be taken during the first semester.

**Master of Science in Education—Secondary**

**Library Science/Media K-12**

Licensed teachers who are seeking an additional license as a school librarian (K-12) in Virginia may take the following courses in the secondary school - library science/media program.

**Core (28 credits)**
- ECI 602 Production of Instructional Materials (3 credits)
- ECI 605 Selection and Utilization of Nonbook Media (3 credits)
- ECI 675 Administration, Management and Evaluation of Libraries (3 credits)
- ECI 676 Library Media Services and the Curriculum (3 credits)
- ECI 677 Technical Services in Libraries (3 credits)
- ECI 678 Selection, Evaluation and Utilization of Materials NK-12 (4 credits)
- ECI 679/879 Reference and Information Retrieval (3 credits)
- ECI 586 Student Teaching for Special Endorsement Taken after the completion of all library core courses (3 credits)

**Support (3 to 9 elective credits):** Prerequisites for the core area may be counted as support courses.

**Research core (7 to 13 credits)**

Thesis option (10-13 credits; 41 credits required for graduation)
- ECI 600 Introduction to Graduate Research (1 credit)
- ECI 635 Research Methods in Education (3 credits)
- ECI 698 Thesis (3-6 credits)
- ELS 732 Statistics Applied to Research in Education (3 credits)
Master of Science in Education—Secondary

Initial State Licensure 6-12

There are a number of individuals who have earned B.S. or B.A. degrees who now want to obtain a master's degree leading to licensure as a secondary school teacher. In the program, students complete (or have completed) a minimum of 32 credits of undergraduate courses in one endorsement area (mathematics, social studies, English, earth science, chemistry, biology, or physics) and an additional 31-34 credits of education courses at the graduate level.

The graduate education component provides preparation in social and cultural foundations of education, adolescent development, classroom management, reading, in the content area, microcomputers and curriculum, instructional strategies for secondary school, special needs, students, research in curriculum and instruction, and a 14-week student teaching experience. Courses include ESSE 506, 513, ECI 530, 608, 619, 640, 669, 680 and one instructional strategies course chosen from ECI 551 (English), 553 (Math), 554 (Science), 555 (Social Studies).

For the subject specialty, academic course requirements must be met in one of the following endorsement areas: mathematics, social studies, English, English as a second language, earth science, chemistry, biology, or physics.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) hold a bachelor's degree from an accredited institution; (2) achieve passing scores (as established by the Commonwealth of Virginia) on the Praxis I Academic Skills Assessment or Board-approved SAT scores; (3) have a general grade point average of 2.80; (4) take and receive satisfactory scores on either the Graduate Record Examination (score of 900 combined on verbal and quantitative for regular admission) or Miller Analogies Test (score of 45 for regular admission); (5) have an interview with the graduate program director; and (6) submit an application for graduate studies. Performance in classes taken as a non-degree student will not be taken into consideration in the admission process. No courses in the academic major or professional education in which the student has made below a C- will be accepted for licensure in the Darden College of Education.

Under certain circumstances, applicants who do not fully meet the requirements for regular admission to the program may be admitted on a provisional basis subject to conditions specified by the graduate program director for secondary education.

Continuance. Students must (1) maintain a grade point average of 3.00; (2) maintain a grade point average of 3.00 in the major; (3) receive a B or better in practicum to participate in teacher internship; and (4) pass Praxis II prior to the teacher internship. Passing scores must be attached to the teacher internship application.

Exit. Students must (1) have a 3.00 grade point average; (2) pass a written comprehensive examination; (3) have an exit interview; (4) have completed all course requirements; and (5) submit an application for graduation. No courses in the academic major or professional education in which the student has made below a C- will be accepted for licensure requirements in the Darden College of Education.

Field-Based Graduate Program

Robert Lucking, Graduate Program Director

The field-based graduate program in the Department of Educational Curriculum and Instruction is a variation of the ECI Department's approved master's programs and offers licensed teachers and other professional educators the opportunity to earn a master's degree at one of several on-site school locations throughout the Commonwealth. Areas of specialization are in elementary/middle education or secondary education. Registration is restricted to licensed educators at the designated public or independent schools. Classes typically are held at those schools, and research and instruction is focused on each school's curriculum, student body and instructional offerings. While the degree programs and requirements mirror on-campus programs, minor curricular variations may occur.
Freshman I  
ENGL 110C Composition I 3  
PSYC 201S Introduction to Psychology or 3  
PSYC 203S Lifespan Development 3  
Fine and Performing Arts Perspective 3  
MATH General Education requirement 3  
Foreign Language Skills I (if needed) or elective 3  

Freshman II  
ENGL 111C Composition II 3  
SOC 201S Introduction to Sociology 3  
Philosophy Perspective 3  
Computer Skills 3  
Foreign Language Skills II (if needed) or elective 3  

Sophomore I  
Natural Science and Technology Perspective I 4  
History Perspective I 3  
Literature Perspective 3  
Elective 3  
Elective 3  

Sophomore II  
Natural Science and Technology Perspective II 4  
History Perspective II 3  
HMSV 339 Interpersonal Relations 3  
HMSV 341 Introduction to Human Services 3  
Elective 3  

Junior I  
Natural Science and Technology Perspective III 3-4  
HMSV 342 Research and Evaluation 3  
HMSV 343 Human Services Methods 3  
Minor or Focus Area Cluster (or elective) 3  
Elective 3  

Junior II  
HMSV 344 Career Development and Appraisal 3  
HMSV 346 Diversity Issues in Human Services 3  
HMSV 368 Field Observation in Human Services 3  
Minor or Focus Area Cluster (or elective) 3  
Minor or Focus Area Cluster (or elective) 3  

Senior I  
HMSV 444 Psychoeducational Groups 3  
HMSV 447 or 448 Addictions: Theory and Intervention or Interventions and Advocacy with Children 3  
HMSV 491 Family Guidance 3  
HMSV 440W Program Development, Implementation and Funding 3  
Minor or Focus Area Cluster (or elective) 3  

Senior II  
HMSV 468 Internship (meets oral communication requirement) 12  
Elective 3  

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minor in Human Services  
The minor requires fifteen hours of course work which must include HMSV 339, 341, 346, and two additional courses from among the following list: HMSV 342, 344, 442, 447, 448, and 491. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Master of Science in Education—Counseling  
To be named, Graduate Program Director

The counseling program offers a master’s degree and an Education Specialist degree, both of which fulfill the requirements for licensure by the state of Virginia as a school counselor and/or Licensed Professional Counselor. The program offers a curriculum which emphasizes the following core components: human growth and development; social and cultural foundations; the nature of helping relationships; group theory and group process; career and lifestyle development; appraisal, research and program evaluation; ethics, standards, and credentialing; and professional issues. The program also aims at stimulating social advocacy and systems understanding in order to reduce disparities among groups. In addition, course work specific to the various emphasis areas is required. A variety of field placement activities (e.g., practicum, internship) are required to assure that students are able to apply the skills and knowledge they learned to helping clients. The counseling program is designed to insure that the counseling student possesses the personal characteristics necessary to be an effective counselor. This is accomplished through the admissions process, use of experiential and didactic learning approaches, and use of an ongoing screening process of students. The program is accredited by the Council for the Accreditation of Counseling and Related Programs (CACREP). Additional program objectives and other important program information can be found in the Program Handbook.

The master’s degree in counseling offers three specialty areas: community counseling, student affairs, and school counseling. Although all three emphasis areas meet the goals of the program as noted above and in the Program Handbook, the school counseling emphasis area is committed to engaging students in the acquisition and application of knowledge relevant to a new vision of school counseling. Through content and experiential learning in both classroom settings and in the schools, graduate students are trained to become school counselors who are systemic thinkers, leaders, partnership builders, advocates for children, and proactive professionals who embrace the belief that all children are capable of achieving at high levels. By defining the roles and functions of the school counselor in innovative ways, this new paradigm in school counseling stresses the concept that school counselors are a major force in closing the “achievement gap” and that these changes will be observable and measurable.

Admission, Continuance, and Exit Requirements  
Admission. Students must have a bachelor’s degree with 12 hours of prerequisite course work in the social sciences. Admission criteria include an undergraduate GPA of at least 3.00, Graduate Record Examination scores, recommendations, an essay, and on request by the program faculty, an interview (see graduate admission booklet). All students who are accepted are initially admitted to conditional status. Following successful completion of 13 specified hours of conditional course work and evaluation by the faculty, students are changed to regular status.

Continuance. Students must meet all University and program requirements. In addition, students must successfully pass the writing proficiency exam, obtain a B or better average for the first 13 credits, with no more than one C for the first 13 credits, be positively evaluated by program faculty while taking conditional status course work, have demonstrated professional demeanor and have shown acceptance of personal responsibility for their actions, and have obtained a B- or better in Counseling Skills (COUN 633).

Exit. Students must successfully complete a written comprehensive examination and the required course of study.

Program Requirements  
The program maintains emphasis areas in school counseling, student affairs, and community counseling which are consistent with guidelines which have been set by the Council for the Accreditation of Counseling and Related Programs (CACREP). A minimum of 48 semester hours is required for the Master of Science in Education with a major in counseling. Three to six semester hours may be earned for a thesis if the student selects the thesis option. Toward the conclusion of the program, all students must pass a comprehensive examination.

All students are required to take 39 credits of common-core course work which includes COUN 601, 630, 633, 645, 650 (conditional course work) and 631, 635, 644, 648, 665, 669, 732. Additional course work in emphasis areas include the following. SCHOOL COUNSELING: COUN 676, 678, 681, COMMUNITY COUNSELING: COUN 680, 691; STUDENT AFFAIRS: COUN 707, 710. In addition, the community counseling and student affairs emphasis areas require three credits of elective course work.
Education Specialist—Counseling

To be named, Coordinator

The Education Specialist (Ed.S.) degree in counseling is designed to further develop and broaden students’ knowledge and skills in counseling and to cultivate their capacity for leadership as a professional. The Ed.S. is suitable for individuals who desire to enhance their preparation as a professional and to satisfy the academic portion of the state requirements for licensure as a professional counselor. It is considered a terminal counseling practitioner’s degree.

Admission, Continuance, and Exit Requirements

Admission. Students must have a master’s degree in counseling or a related field. The master’s degree must include graduate course work in counseling theories, counseling skills, group counseling, social and cultural foundations, counseling across the life span, testing and individual appraisal, research methods, foundations of career development, growth and group experience and documentation of a practicum or internship consisting of a minimum of 180 hours of successful full-time supervised counseling experience. Students must also have one year of work experience as a counselor. Any of these courses, or their equivalents, not taken at the master’s level will have to be taken as prerequisites before admission as a regular student. Additional admission requirements are an acceptable graduate GPA, acceptable scores on the Graduate Record Examination, three letters of professional recommendation, and an essay on professional career goals and expectations.

Applicants whose grade point averages or test scores are slightly below the required minimum will be considered for provisional admission.

Non-matriculated or non-degree status. Students may take a maximum of six credits as a non-matriculated or non-degree student before being admitted into the program.

Continuance. Students must meet all University requirements.

Exit. Students must successfully complete the required course of study (30 hours) with a grade point average of 3.00 or better, a written comprehensive examination, and the department writing proficiency examination if not taken on the master’s level.

Program Requirements

The Education Specialist degree requires 30 semester hours of course work, excluding any prerequisites. At least 18 of the 30 credits must be at the 700 or 800 level. Required courses are COUN 842, 844, 845, 846, 847, and 868. Any core requirement in the Old Dominion University master’s program in counseling not previously taken is required and can be used toward elective credits in the Education Specialist program.

Professional Counselor (LPC) Track

The purpose of the Licensed Professional Counselor track is to provide a coherent advanced curriculum for future licensed professional counselors and therapists. These studies are designed to educate counselors in advanced theory, advanced group counseling, client assessment and treatment planning, counseling supervision, and addictions counseling.

The Licensed Professional Counselor track requires a master’s degree in counseling and any courses not previously taken from the content areas required for the Virginia LPC. Required courses are COUN 842, 844, 845, 846, 847, and 892.

The counseling program is not associated with the Board of Licensed Professional Counselors, Marriage and Family Therapists, and Substance Abuse Professionals. Please contact the Board at (804) 662-9900 for other specific information, such as the number of hours of post-master’s supervised counseling practice needed, the total number of credits to become an LPC, and other requirements to sit for the licensing exam.

Master of Science in Education—Educational Leadership

Administration and Supervision Emphasis

William A. Owings, Graduate Program Director

The purpose of the master’s program is to prepare individuals to assume leadership responsibilities in education, training, and human service organizations. The program offers options which lead to PreK-12 administration and supervision licensure and a Master of Science in Education degree for candidates seeking principal and supervision licensure. Emphasis is on the preparation of visionary and responsive leaders for educational and training organizations. The program fosters an understanding of educational leadership, research, and supervision. The Master of Science in Education degree in administration and supervision is approved by the state of Virginia and the National Council for Accreditation of Teacher Education. Individualized programs are also planned.

The administration and supervision emphasis area is based on the Commonwealth of Virginia’s six competencies for educational leaders. Through this program participants will develop and demonstrate competence in the following areas:

1. Knowledge and understanding of student growth and development, including:
   a. Applied learning and motivational theories;
   b. Curriculum design, implementation, evaluation and refinement;
   c. Principles of effective instruction, measurement, evaluation and assessment strategies;
   d. Diversity and its meaning for educational programs;
   e. The role of technology in promoting student learning.

2. Knowledge and understanding of systems and organizations, including:
   a. Systems theory and the change process of systems, organizations and individuals;
   b. The principles of developing and implementing strategic plans;
   c. Information sources and processing, including data collection and data analysis strategies;
   d. Learning goals in a pluralistic society; and
   e. Effective communication, including consensus building and negotiation skills.

3. Knowledge and understanding of theories, models, and principles of organizational development, including:
   a. Operational procedures at the school and division/district level;
   b. Principles and issues of school safety and security;
   c. Human resources management and development, including adult learning and professional development models;
   d. Principles and issues related to fiscal operations of school management;
   e. Principles and issues related to school facilities and use of space;
   f. Legal issues impacting school operations and management; and
   g. Technologies that support management functions.

4. Knowledge and understanding of the conditions and dynamics of the diverse school community, including:
   a. Emerging issues and trends that impact the school community;
   b. Community resources and partnerships of school, family, business, government and higher education institutions; and
   c. Community relations and marketing strategies and processes.

5. Knowledge and understanding of the purpose of education and its role in a modern society, including:
   a. The philosophy and history of education;
   b. Various ethical frameworks and professional ethics;
   c. The value of the diverse school community; and
   d. The role of leadership in modern society.

6. Knowledge and understanding of principles of representative governance that undergird the system of American schools, including:
   a. The role of public education in developing and renewing a democratic society and an economically productive nation;
   b. The law as related to education and schooling;
   c. The political, social, cultural and economic systems and processes that impact schools;
   d. Models and strategies of change and conflict resolution as applied to the larger political, social, cultural and economic contexts of schooling;
   e. Global issues and forces affecting teaching and learning; and
   f. The importance of diversity and equity in a democratic society.

Admission, Continuance, and Exit Requirements

Admission. Students must (1) meet all University requirements;
(2) have an undergraduate grade point average of 2.80 overall and 3.00 in the major; (3) provide two letters of recommendation, including one from an administrator who will serve as the student’s sponsor/mentor; (4) complete a one-page essay explaining why he/she should be admitted into the program; and (5) have an acceptable score on the Graduate Record Examination or the Miller Analogies Test. In addition, all students who wish
to enter the administration and supervision program with Commonwealth of Virginia accreditation must satisfactorily complete an administrative skills portfolio assessment process. ELS 600 must be the first course in which students enroll. Performance in classes as a non-degree student will not be taken into consideration in the admission process.

Continuance. Students must meet all University and program requirements including the administrative skills portfolio and maintain a 3.00 grade point average. Those seeking the Administration and Supervision PreK-12 endorsement on their Commonwealth of Virginia Postgraduate Professional license beginning July 1, 2005 must take and pass the School Leaders Licensure Assessment (SLLA, #1010).

Exit. Students must successfully complete (1) a written comprehensive examination; (2) the required course of study; (3) a critical issues paper in ELS 673; (4) the administrative skills assessment portfolio, observation and practicum, and internship; and (5) have a minimum 3.00 grade point average in order to graduate.

Program Requirements

For the Master of Science in Education with an emphasis in administration and supervision, the student must have completed an approved 36-hour minimum graduate program with a culminating written comprehensive examination and administrative skills portfolio assessment. Approved field observation, practicum, and internship experiences are required, and students must demonstrate competence in computer applications in educational administration and supervision or take ELS 760. The thesis option is available to all students.

Administration and Supervision Preparation for Public School Pre K-12 Licensure

Requirements for this emphasis area are as follows.

Prerequisite
ELS 760 Technology Applications in Educational Administration and Supervision (or demonstrated competency in computer applications)

Curriculum (21 hours)
*ELS 600 Principal Orientation and Instructional Leadership—This course must be taken first and includes the start of an administrative Portfolio Skills Assessment.
*ELS 610 School Community Relations and Politics
*ELS 621 Curriculum Development and Assessment
*ELS 754 Human Resource Development and Evaluation
*ELS 753 Public School Finance
*ELS 787 Public Personnel Services for Diverse Populations
*ELS 657 Public School Law

Clinical Experiences (9 hours)
*ELS 626 Instructional Supervision and Assessment
*ELS 668 Internship in Educational Administration and Supervision
ELS 669 Field Observation and Practicum

Research Component (6 hours)
ELS 660 Program Evaluation, Research and Planning
ELS 673 Critical Issues Research
*Licensure program only if holding an M.S. degree (also see Education Specialist degree program later in this section)

Licensure-Only (Non-Degree Student)

The Department of Educational Leadership and Counseling encourages students to obtain their PreK-12 administration and supervision licensure as part of an educational leadership degree program. All licensure-only students must have a bachelor's and master's degree from an accredited university, three years of educational experience, and completion of the state-approved licensure-only course work to obtain PreK-12 administration and supervision licensure. The graduate program director in educational leadership must receive licensure-only students' official transcripts and proof of three years of educational experience prior to the end of the first semester of course work. A non-degree status student awaiting admission to a degree program should submit materials directly to the Office of Admissions. Only 12 hours of course work can be transferred from non-degree status.

Master of Science in Education—Educational Leadership

Higher Education Emphasis

Dennis E. Gregory, Graduate Program Director

The purpose of the master's program is to prepare individuals to assume professional administrative positions in institutions of postsecondary education. The program provides tracks in student affairs, general administration, and international higher education administration. The program features a mix of theory and practice and offers students the opportunity to gain expertise in both administrative and counseling skills. The program is among those listed as meeting the requirements for graduate programs of the American College Personnel Association (ACPA) and is also listed among programs provided by the National Association of Student Personnel Administrators (NASPA). The program meets standards established by the Council for the Advancement of Standards (CAS).

Admission. Prospective students seeking admission to the master's degree program in higher education must:
(1) meet all University admission requirements as listed earlier in this Catalog;
(2) have an undergraduate grade point average of 2.80 overall and 3.00 in the major;
(3) provide two letters of recommendation from an administrator or faculty member at the student's undergraduate institution (one letter should come from a person who has supervised the student in a leadership position or who can comment on the student's potential for work in a higher education setting; the other may come from another person);
(4) provide a one-page essay on why the student is requesting admission to this program;
(5) have an acceptable score on the Graduate Record Examination (GRE) or Miller Analogies Test (MAT); and
(6) for non-native speakers of English, demonstrate English proficiency by a score of 570 (230 on the computer-based test) on the TOEFL exam, an appropriate score on the verbal section of the GRE exam, and an appropriate score on the SPEAK Test of Spoken English.

Continuance. Regularly accepted students and those who become regularly accepted must:
(1) meet all University and program requirements;
(2) maintain a 3.00 grade point average; and
(3) complete internship requirements in a timely manner.

Program Completion and Exit. In order to graduate from the program, students must successfully complete:
(1) the required course of study for a total of at least 42 credit hours of course work;
(2) either a satisfactory demonstration of computer competency as determined by the graduate program director or completion of ELS 760 (3 semester credit hours), Computer Applications in Educational Administration and Supervision; and
(3) a written comprehensive examination.

Program Requirements

In order to complete the course of study for the degree of Master of Science in Education with an emphasis in higher education, a student must fulfill the requirements noted above. This course of study includes satisfactory completion of 27 hours of required courses, nine hours of cognate courses and six hours of internship credit. Students select either the student affairs track, the general administration track, or the international higher education administration track.

Curriculum for the Student Affairs Track

Required Courses (27 credits)
COUN 633 Counseling Skills
COUN 635 Research Methods
COUN 707 Adult and College Student Development
COUN 710 College Student Personnel Work
HIED 708 Contemporary Issues in Higher Education
HIED 745 Today's College Student and Diversity
HIED 752 The Law of Higher Education
HIED 757 The Multicultural University
HIED 761 Higher Education Capstone
Curriculum for the General Administration Track

**Required Courses** (27 credits)
- COUN 635 Research Methods
- COUN 710 College Student Personnel Work
- HIED 708 Contemporary Issues in Higher Education
- HIED 752 The Law of Higher Education
- HIED 756 Higher Education Finance
- HIED 757 The Multicultural University
- HIED 761 Higher Education Capstone
- HIED 793 The History of Higher Education in the U.S.
- HIED 794 Organization and Administration of Higher Education in the U.S.

**Cognate (Choose three: 9 credits)**
- COUN 633 Counseling Skills
- COUN 648 Foundations of Career Development
- COUN 655 Social and Cultural Issues in Counseling
- COUN 707 Adult and College Student Development
- ELS 677 Program Assessment and Evaluation
- ELS 732 Statistics Applied to Research in Education and Human Services I
- HIED 745 Today's College Student and Diversity
- HIED 758 Higher Education Leadership
- HIED 759 Higher Education Curriculum
- HIED 766 The Contemporary Community College
- HIED 795 Special Topics in Higher Education

Curriculum for the International Higher Education Administration Track

**Required Courses** (27 credits)
- COMM 600 Intercultural Communication
- COUN 635 Research Methods
- COUN 707 Adult and College Student Development
- HIED 708 Contemporary Issues in Higher Education
- HIED 743 Introduction to International Higher Education Administration
- HIED 744 Comparative Higher Education Systems
- HIED 752 The Law of Higher Education
- HIED 757 The Multicultural University
- HIED 761 Higher Education Capstone

**Cognate (Choose three: 9 credits)**
Choose one of the following areas of specialization:

1. **Higher Education and Globalization**
   - HIST 633 Studies in International History
   - POLS 665 International Political Economy
   - ECON 650 International Economics
   - MKTG 640 Global Marketing Management
   - HIED 793 History of Higher Education in the United States

2. **Cross Cultural/Multicultural Counseling**
   - COUN 633 Counseling Skills
   - COUN 655 Social and Cultural Issues in Counseling
   - HIED 745 Today's College Student and Diversity
   - PSYC 653 Personality Psychology

3. **Program Assessment and Evaluation**
   - ELS 677 Program Assessment and Evaluation
   - ELS 732 Statistics in Education and Human Services
   - HIED 756 Higher Education Finance
   - PADM 704 Methods of Public Program Evaluation

**Required Internship Experience** (Required for all three tracks: 6 credits) Should be done in two three-credit hour internship experiences.
- HIED 668 Internship in Higher Education Administration

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**Education Specialist–Educational Leadership**

William A. Owings, Graduate Program Director

The Education Specialist (Ed.S.) program is designed to provide further opportunities for holders of master’s degrees to develop expertise at a higher professional level. Emphasis is on continued development for leadership in policy formulation, planning, and executive action related to educational and training institutions and human service organizations. Individuals who aspire to advance in educational leadership will find in this program a meaningful base for building toward their professional objectives. The Ed.S. program in educational leadership includes emphasis areas in administration and supervision and in higher education.

**Admission, Continuance, and Exit Requirements**

**Admission.** Students must (1) meet all University requirements; (2) provide two letters of recommendation; (3) hold a master's degree from an accredited institution (minimum 3.25 graduate grade point average on a 4.00 scale); (4) provide a one-page essay explaining why he/she should be admitted into the program; and (5) have an acceptable score on the general aptitude section of the Graduate Record Examination or the Miller Analogies Test. Applicants whose admission credentials are slightly below the required minimum will be considered for provisional admission. Performance in classes as a non-degree student will not be taken into consideration in the admission process.

**Continuance.** Students must meet all University requirements and maintain a 3.00 or higher grade point average.

**Exit.** Students must successfully complete (1) a written comprehensive examination; (2) the required course of study; and (3) have a 3.00 grade point average or above.

**Administration and Supervision Emphasis**

**Program Requirements**

The Ed.S. requires the completion of a minimum of 30 approved semester credit hours consisting of at least 18 hours at the 800 level. Prerequisite courses required prior to admission to the Ed.S. emphasis in educational administration and supervision are ELS 600, 610, 621, 657, and 668 (or equivalent). Required courses are ELS 853, 854, 871, 876, 878, and 879. The student's advisor must approve all elective courses.

**Higher Education Emphasis**

Dennis E. Gregory, Graduate Program Director

Applicants for this emphasis must meet all of the same admission requirements listed above for the program in educational leadership. Students must meet the same continuance and exit requirements as well.

**Program Requirements**

The Education Specialist (Ed.S.) with an emphasis in higher education requires the completion of a minimum of 30 approved semester credit hours beyond the master's degree. Because of the wide variation of backgrounds among students seeking this degree, the curriculum requirements will be determined based upon the applicant's background. Prospective students with a master's degree in student personnel, higher education or similar programs may be allowed to substitute courses from the urban services program to broaden the applicability of their degree. Required courses, if they have not been taken at the 700 level within a master's degree program, include COUN 807, HIED 808, 852, and 894. Internships and special topics courses will also be used to complete the curriculum.

**Core - 12 credits (required for all students)**
- ELS 732 Statistics Applied to Research in Education and Human Services I
- ELS 833 Research Design
- HIED 868 Internship
- HIED 879 Field Research in Higher Education

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DARDEN COLLEGE OF EDUCATION 157
Content Concentration - 18 credits
Students who have a master's degree in higher education, student personnel, counseling with a student affairs focus or other degrees as determined by the graduate program director may choose, in cooperation with the graduate program director and based upon the student's career interests, 18 credit hours that do not repeat courses taken for the master's degree from the following list.

Counselling Courses
COUN 633 Counselling Skills
COUN 648 Career Development
COUN 807 Student and Adult Development Theory
COUN 810 Introduction to Student Personnel

Higher Education Courses
HIED 808 Contemporary Issues in Higher Education
HIED 845 Contemporary College Student
HIED 852 The Law of Higher Education
HIED 856 Higher Education Finance
HIED 857 The Multicultural University
HIED 858 Higher Education Leadership
HIED 859 Higher Education Curriculum
HIED 861 Higher Education Capstone
HIED 866 The Contemporary Community College
HIED 893 The History of Higher Education
HIED 894 Organization and Admin of Higher Education
HIED 895 Special Topics in Higher Education

Doctor of Philosophy—Community College Leadership
Dennis E. Gregory, Interim Graduate Program Director

To meet the executive leadership workforce needs of Virginia's community colleges, community colleges in the Southeast United States, and beyond, Old Dominion University has developed a Doctor of Philosophy degree in Community College Leadership. The innovative quality of this program supports the university's commitment to technology-generated learning by implementing leadership graduate courses at each of the 23 VCCS community colleges and elsewhere in the United States through Old Dominion University's TeleTechNet delivery system. Other course delivery methods including video streaming, asynchronous courses and other emerging technological approaches will be used as they are available and practical. This enables prospective students to meet their personal and professional needs by offering accessible graduate education.

Some of the unique community college leadership issues that are addressed in this program are: the diversity of the student body, the role of the community college in the higher education system of Virginia, the role and expectations of the communities hosting the community college, and the importance of the workforce preparation the community colleges provide for the local community.

Admission
Criteria for admission into the Ph.D. in Community College Leadership are as follows:

- A completed master's degree in an appropriate discipline from an accredited university. Degrees that are equivalent to a master's degree such as L.L.B., J.D., and D.D.S. are also acceptable.
- A minimum GPA of 3.5 (on a 4.0 scale) overall for the master's degree and in the major area of study in the master's degree.
- Minimum of 1500 overall total score on the GRE and a minimum of 500 on the verbal section of the GRE. GRE scores expire after five years; however, candidates who have completed the exam prior to five years before the application deadline may submit those scores for consideration if the scores meet the minimum expectations and they are provided from an official source such as a transcript or form provided by the Educational Testing Service. Old Dominion University reserves the right to determine what is an "official source."
- Applicants whose native language is not English must submit a current score for the Test of English as a Foreign Language (TOEFL) of at least 600.
- Applicants must submit a 1500 word statement of their academic and professional goals with an emphasis on how the Ph.D. degree in Community College Leadership will contribute to the achievement of the stated goals.
- Three letters of reference from sources capable of commenting on the applicant's readiness for advanced graduate study. At least one of these letters must be from a senior-level administrator in a community college.
- An interview with the Community College Leadership Program Committee, one member of which will be a president, provost, dean or other senior representative from the administration of a community college. This committee will also review applications for admission. Students who fail to meet one or more of the admission criteria may be admitted as provisional students with requirements that they complete specific graduate courses with a grade no lower than a "B" during the first 12 hours before being admitted to regular graduate student status. Any representative from the home campus of an applicant will recuse himself or herself from participation in consideration of that applicant.
- Prior course work is assumed in statistics, student development, workforce development, and leadership theory. If this assumption is not met, then additional course work will be added to the candidate's graduate program of study.

Program Requirements
The Ph.D. program in Community College Leadership is comprised of courses totaling a minimum of 48 academic credit hours beyond the master's degree. The curriculum includes four parts including a content concentration totaling 18 credit hours, a research component including 12 credit hours, nine credit hours of electives and the dissertation which will include a minimum of nine credit hours. The dissertation will often include 12 or more credit hours depending on the length of time necessary for completion.

Students entering the program may also need to complete one introductory statistics course if they have not had such a course or cannot demonstrate competency at a satisfactory level. If students have not yet served in an administrative or other leadership position in a community college for a minimum of three years, they will also need to complete a six credit hour internship. Students who come into the Ph.D. program with a master's degree in an academic field that is unrelated to higher education administration and/or who have not completed courses to develop competency in specified areas will need to complete these courses in lieu of electives.

Admissions are offered once a year in order to build efficient cohort groups for this type of advanced study. In order to enhance the experience of the students and to increase the efficiency by which courses are offered, a cohort of 25 students will be admitted each year. This limited number of students is necessary to assure that there is an adequate number of full-time faculty to serve the students through advising and other duties, particularly when the cohorts reach the dissertation stage of the program. To build a cohesive cohort group, a series of intensive courses will be offered on the Old Dominion University campus. Applicants must submit completed applications and all related material no later than February 1 of each year, and students will be admitted for study beginning in June or July of the same year. A minimum of two semesters of full-time study is required of students in the program to meet University residency requirements. One of the semesters of full-time study (defined as completion of nine credit hours) must be accomplished by the completion of a three-week residency in the first summer after admission. During that residency the student will complete two courses (six credit hours) with their entering cohort group. In addition, the student must enroll in an additional three credit hour course that will be taught during the summer via TeleTechNet or other distance education methodologies as developed. These courses will be selected from within the "content concentration" or "research" requirements. The second semester of residency can be accomplished in several ways. Students may complete nine credit hours during any semester, may attend a second summer residency, and/or may enroll for nine dissertation credit hours during a semester. Courses taken via TeleTechNet or other distance education methodologies are considered "resident" courses, so that taking three TeleTechNet courses during a semester may complete the second residency requirement.

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Curriculum

Content Concentration Courses (18 Credit Hours)
CCL 820 Community College Leadership
CCL 824 Community College Finance
CCL 826 Community College Curriculum and Program Development
HIED 866 The Contemporary Community College
OTED 865 Trends and Issues in Workforce and Economic Development
OTED 889 Instructional Technology in Education and Training

Research (12 Credit Hours)
ELS 677 Program Assessment and Evaluation
ELS 832 Statistics Applied to Research in Education
ELS 833 Advanced Research Design and Analysis
HIED 881 Dissertation Seminar

Dissertation (9-12 Credit Hours)
HIED 899 Dissertation

Electives (9 Credit Hours*)
Students may choose three courses from those listed below or from other courses as approved by their academic advisor.
CCL 868 Internship in Community College Education**
COUN 807 Adult and College Student Development
COUN 810 College Student Personnel Work
HIED 808 Contemporary Issues in Higher Education
HIED 845 Today’s College Student and Diversity
HIED 852 The Law of Higher Education
HIED 856 Higher Education Finance
HIED 857 The Multicultural University
HIED 893 The History of Higher Education in the U.S.
HIED 894 Organization and Administration of Higher Education
HIED 895 Special Topics in Higher Education
OTED 830 Introduction to Technology
OTED 850 Trends and Issues in Training; Modeling and Simulation
OTED 860 Trends and Issues in Occupational Education
OTED 861 Foundations of Adult Education and Training
OTED 862 Administration of Adult Training Programs
OTED 885 Curriculum Development in Occupational Education and Training
OTED 888 Instructional Strategies and Innovations in Training and Occupational Education
OTED 890 Practicum in Occupational Education

*COUN 807: Student and Adult Development Theory, COUN 810: Introduction to Student Personnel, and HIED 808: Contemporary Issues in Higher Education, or their equivalents, are prerequisites to the core courses and must be taken in lieu of electives. Students who have completed these or similar courses as part of a master’s or education specialist degree program may substitute courses from the electives listed or other courses within the University as approved by the student’s advisor as electives.

**Students who do not have a minimum of three years of full-time employment experience in a position as an administrator in a community college will be required to complete CCL 868. This is an internship in community college administration that consists of a minimum of two 300-hour experiences for three credits each, or one 600-hour experience for six credits.

Cognate Within Urban Services Ph.D. Program

Cognates in specific administration disciplines and in human services are available for students in the urban education concentration of the Ph.D. in urban services program. The program is designed specifically for those who will assume high level administrative positions in urban areas. Students should consult the graduate program director of the education concentration of the Ph.D./U.S. program to determine the advisor for the appropriate doctoral-level cognate in which they are interested. The Ph.D./U.S. program is for highly competent and motivated students who wish to increase their leadership potential for urban environments. Cognates are available in both the administration and supervision and higher education areas of interest.

EXERCISE SCIENCE, SPORT, PHYSICAL EDUCATION, AND RECREATION

J. David Brach, Chair

The Department of Exercise Science, Sport, Physical Education, and Recreation offers programs leading to the Bachelor of Science with a major in physical education, the Bachelor of Science with a major in recreation and tourism studies, and the Master of Science in Education with a major in physical education.

Bachelor of Science—Physical Education Major

Admission, Continuation, and Exit Requirements

Admission. Students must (1) have completed 13 semester hours of course work including ENGL 110C; (2) have a grade point average of 2.00 (2.75 for teacher licensure) and (3) complete a personal interview.

Continuation. Students must (1) maintain an overall grade point average of 2.00 (2.75 for teacher licensure); and (2) maintain a grade point average of 2.00 (2.75 for teacher licensure with no less than C earned in all major courses) in the major.

Exit. Students must (1) have an overall grade point average of 2.00 (2.75 for teacher licensure); (2) have a grade point average of 2.00 (2.75 for teacher licensure with no less than C earned in all major courses) in the major; (3) demonstrate writing proficiency prior to any required internship experience; (4) satisfy all course competencies; (5) complete teacher candidate internship or internship (if required in the emphasis area); (6) complete an exit interview with the department chair; and (7) successfully complete University assessment exams. To obtain a Virginia teaching license, all teacher education and licensure only students must complete the approved program of study and attain a passing score on the Praxis II test of Health and Physical Education content knowledge, form 0856, as set by the Virginia Department of Education.

Sport Management Emphasis

Robert Case, Program Coordinator

This program is designed to prepare students for managerial positions within sport-oriented organizations. Careers in sport promotion, sport marketing, health and fitness center management, sport event management, sport facility/arena management and other sport-related businesses are targeted. This program is approved and accredited through the North American Society for Sport Management (NASSM) and the National Association for Sport and Physical Education (NASPE). The requirements for the emphasis are as follows:

LOWER DIVISION GENERAL EDUCATION

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Written Communication</td>
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<tr>
<td>Oral Communication</td>
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<tr>
<td>Mathematics (MATH 102M or STAT 130M required)</td>
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<tr>
<td>Computer Skills</td>
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<td>Fine and Performing Arts</td>
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<td>History</td>
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<td>Literature</td>
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<td>Philosophy</td>
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<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
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</tbody>
</table>

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

Social Science (ECON 200S or 202S required) | 3       |

SPORT MANAGEMENT REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OTS 102 Advertising and Promotion or OTS 100 Sales Techniques</td>
<td>3</td>
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<tr>
<td>ACCT 201 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311 Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>SMGT 214 Introduction to Sports Management</td>
<td>3</td>
</tr>
<tr>
<td>SMGT 305 Sport Administrative Theory</td>
<td>3</td>
</tr>
<tr>
<td>SMGT 315 Sport Media and Public Relations</td>
<td>3</td>
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<tr>
<td>SMGT 368W Internship</td>
<td>12</td>
</tr>
</tbody>
</table>
Exercise Science Emphasis

J. David Branch, Program Coordinator

This program is designed to prepare students for careers in preventive and rehabilitative exercise and wellness programs in settings such as hospitals, wellness and rehabilitation centers, sports medicine clinics, government agencies, health and fitness centers, and corporate industry. Academic preparation focuses on the scientific aspects of exercise related to asymptomatic and symptomatic populations. The program also serves to prepare students for graduate studies in exercise science, physical therapy, and other allied health fields. The requirements for the emphasis are as follows:

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication 6
Oral Communication 3
Mathematics (MATH 102M or 162M) 3
Foreign Language 0-6
Computer Skills 3
Fine and Performing Arts 3
History 3
Literature 3
Philosophy 3
Natural Science and Technology (BIOL 115N-116N and PHYS 111N required) 12
Social Science (PSYC 201S required) 3

Exercise Science Requirements
BIOL 250 Anatomy and Physiology I 4
BIOL 251 Anatomy and Physiology II 4
CHEM 115N Foundations of Chemistry I 4
CHEM 116N Foundations of Chemistry II 4
EXSC 225 Introduction to Exercise Science 3
EXSC 250 Strength and Conditioning Leadership 3
EXSC 322 Anatomical Kinesiology-Human Anatomy 4
EXSC 340 Prevention/Care of Injuries 3
EXSC 408 Nutrition Fitness and Sport 3
EXSC 415 Exercise Test/Nml/Spc Pop 3
EXSC 417W Adv Kinesiology/Biomechanics 4
EXSC 428 Exer Prescription/Chronic Dis 3
EXSC 431 Wellness Programming/Administration 3

EXSC 368W Internship 12
EXSC 409 Physiology of Exercise 3
Electives 8

All EXSC courses will be used to calculate the major grade point average which must be 2.00 to graduate.

UPPER DIVISION GENERAL EDUCATION

Option A. 12-24 hours Approved Minor
Option B. 9 hours (3 hours may be in the major area of study)-Cluster

Additional free elective hours may be needed to make 120 credits total. A minimum 2.00 grade point average is required in the major, minor and overall to meet graduation requirements. Other requirements include passage of the Exit Writing Examination, completion of the Senior Survey, and an exit interview with the department chair.

Teaching Licensure Emphasis

Sandra Bowie, Program Coordinator

This program is designed to promote competencies involved in the teaching of health and physical education in pre-kindergarten through grade 12. The requirements for the emphasis are as follows:

Admission. Students wanting to enroll in the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than C- in the content area and the professional education core. Additionally, students must pass the Praxis I exam or SAT, based on the Commonwealth of Virginia standards by the end of the sophomore year and complete the Office of Teacher Education Services and Advising application to be accepted into teacher education. This must be done prior to enrollment in the 60th credit hour.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. Candidates must pass the Praxis II test of Health and Physical Education Content Knowledge Form 0856 prior to the entrance into the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than C- in the content area and the professional education core; completion of a minimum of 120 credit hours; and completion of an exit interview with the department chair.

The curriculum is as follows:

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication 6
Oral Communication (requires Comm 101R) 3
Mathematics 3
Foreign Language 0-6
Computer Skills (satisfied by PE 406 in the major) 3
Fine and Performing Arts 3
History 3
Literature 3
Philosophy 3
Natural Science and Technology
  BIOL 108N required 4
  BIOL 109N required 4
  Technology course requirement satisfied in the major by EXSC 322 4
Social Science (requires PSYC 201S) 3

Health and Physical Education Requirements
EXSC 220 Human Anatomy and Physiology 4
ECI 301 Social/Cultural Foundations/Ed 3
ECI 408 Reading Across the Content Areas 3
PE 200 Foundations of HPE 3
PE 217 Fundamental Movement Skills and Dance 2
PE 218 Aquatics and Outdoor Education 1
PE 220 Teaching of Team Sports I 2
PE 221 Teaching of Team Sports II 2
PE 222 Teaching of Individual Sports 2
PE 224 Teaching Elementary Physical Ed 3
PE 300 Mgmt Skills for Teaching Health & PE 3
PE 301 Teach Phys Ed in the Secondary School 3
PE 318 Motor Learning 3

EXSC 427 Exercise Physiology I 3
EXSC 426 Exercise Physiology II 3
EXSC 417W Adv Kinesiology/Biomechanics 4
EXSC 428 Exer Prescription/Chronic Dis 3
EXSC 431 Wellness Programming/Administration 3

Choose one of the following:

Scientific Foundations of Exercise option:
  PHYS 112N Intro General Physics II 4
  EXSC 420 Research Methods Exer Science 3
  EXSC 426 Exercise Physiology I 3
  EXSC 427 Exercise Physiology II 3
  Electives 10

Preventive/Rehabilitative Exercise option:
  EXSC 368W Internship 12
Betsy Kennedy, Program Coordinator

This program is designed to prepare students to enter the professional fields of recreation and tourism management and therapeutic recreation. The recreation and tourism studies curriculum is accredited by the National Recreation and Park Association/American Association for Leisure and Recreation Council on Accreditation.

A minimum of 120 credit hours is required for the recreation and tourism studies major.

**Admission, Continuance, and Exit Requirements**

- **Admission.** Students must (1) have completed 15 semester hours of course work (including ENGL 110C) with a grade point average of 2.00; and (2) have a personal interview with a faculty member in the program.

- **Continuance.** Students must (1) maintain an overall grade point average of 2.00; (2) maintain a grade point average of 2.00 in the major; (3) take the University Exit Examination of Writing Proficiency in the junior year; and (4) complete an internship seminar and all core course work prior to the internship.

- **Exit.** Students must (1) have an overall grade point average of 2.00; (2) have a grade point average of 2.00 in the major; (3) pass the University exit examination of writing proficiency; (4) complete an internship; (5) satisfy all course competencies; (6) take the University assessment exam; and (7) have an exit interview with the department chair.

**Program Requirements**

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Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

**Social Science** 3

**Recreation and Tourism Studies Core:**

- RTS 201 Recreation Leadership 3
- RTS 211 Foundations/Rec and Leisure 3
- RTS 241 Recreation Programming 3
- RTS 261 Intro Therapeutic Recreation 3
- RTS 271 Intro Recreation/Tourism Studies 3
- RTS 300 Computer App in Rec &Sport Mgmt 3
- RTS 331 Admin I: Financial Mgmt 3
- RTS 332 Admin II: Personnel Mgmt 3
- RTS 366 Internship Seminar 1
- RTS 368 Internship 12
- RTS 369 Practicum 3
- RTS 411 Trends in Recreation 3
- RTS 425 Facility Mgmt & Design 3
- RTS 482W Program Evaluation in Recreation 3

**Add-On Teaching Endorsement Area**

**Driver Education** (State Certification): PE 308, 309. These two elective courses are not required, but are strongly encouraged to be taken by majors pursuing teaching licensure to enhance job marketability.

**Bachelor of Science–Recreation and Tourism Studies Major**

Students must (1) have an overall grade point average of 2.00; and (2) have a personal interview with a faculty member in the program.

- **Admission, Continuance, and Exit Requirements**

- **Continuance.** Students must (1) maintain an overall grade point average of 2.00; (2) maintain a grade point average of 2.00 in the major; (3) take the University Exit Examination of Writing Proficiency in the junior year; and (4) complete an internship seminar and all core course work prior to the internship.

- **Exit.** Students must (1) have an overall grade point average of 2.00; (2) have a grade point average of 2.00 in the major; (3) pass the University exit examination of writing proficiency; (4) complete an internship; (5) satisfy all course competencies; (6) take the University assessment exam; and (7) have an exit interview with the department chair.

- **Program Requirements**

- **LOWER DIVISION GENERAL EDUCATION**

- **Credits**

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Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required.

**Social Science** 3

**Recreation and Tourism Studies Core:**

- RTS 201 Recreation Leadership 3
- RTS 211 Foundations/Rec and Leisure 3
- RTS 241 Recreation Programming 3
- RTS 261 Intro Therapeutic Recreation 3
- RTS 271 Intro Recreation/Tourism Studies 3
- RTS 300 Computer App in Rec &Sport Mgmt 3
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- RTS 411 Trends in Recreation 3
- RTS 425 Facility Mgmt & Design 3
- RTS 482W Program Evaluation in Recreation 3

**Add-On Teaching Endorsement Area**

**Driver Education** (State Certification): PE 308, 309. These two elective courses are not required, but are strongly encouraged to be taken by majors pursuing teaching licensure to enhance job marketability.

**Bachelor of Science–Recreation and Tourism Studies Major**

Students must (1) have an overall grade point average of 2.00; and (2) have a personal interview with a faculty member in the program.

- **Admission, Continuance, and Exit Requirements**

- **Continuance.** Students must (1) maintain an overall grade point average of 2.00; (2) maintain a grade point average of 2.00 in the major; (3) take the University Exit Examination of Writing Proficiency, and completion of Senior Continuance.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Minors**

**Exercise Science (21 credits).** BIOL 250; EXSC 225, 322, 409, 415; plus three hours from one of the following: EXSC 428, 431, 440, 456.

**Health Education—Nonteaching Track (22 credits).** BIOL 250; HE 224, 230, 302, 481; HPE 430; PE 319

**Recreation and Tourism Management (15 credits).** RTS 271 and 12 hours from the following: RTS 405, 431, 461, 475, 482W, 491.

**Sport Management (15 credits).** SMGT 214; 12 hours from the following: SMGT 305, 315, 331, 414W, 421, 425, 450, 453, 455, 456.

**Therapeutic Recreation (15 credits).** RTS 261 and 12 hours from the following: RTS 410, 420, 430, 450, 482W.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor (2.75 for teacher licensure with no less than C- earned in all core courses) and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

To obtain a Virginia teaching license, all teacher education and licensure only students must attain a passing score on the appropriate Praxis II specialty area test.

**Advanced Placement**

Departmental examinations for advanced placement are available for selected courses in the undergraduate programs. Please contact the department chair for further details. Refer also to the Policy on Experiential Learning Credit Options at the Undergraduate Level in this Catalog.
Master of Science in Education-Physical Education

The department offers a varied graduate program that includes three separate tracks and five emphasis areas. The three tracks are as follows: (1) thesis research (30 credit hours minimum, including a six-credit-hour thesis); (2) research problem (33 credit hours minimum, including a three-credit-hour research problem); (3) non-research (36 credit hours minimum). The sport management, recreation and tourism studies, exercise science and wellness, and the physical education and health curriculum and instruction emphasis areas contain a minimum of 36 credit hours to graduate. The athletic training emphasis area contains a minimum of 39 credit hours to graduate. In addition, the curriculum and instruction emphasis area includes a program for currently licensed teachers as well as a program that leads to initial PK-12 health/physical education teacher licensure in the Commonwealth of Virginia.

Admission and Exit Requirements

Admission. Students must (1) have an overall grade point average (GPA) of 2.80 and an average of 3.00 in the undergraduate major and (2) have a score of at least 900 between quantitative and verbal on the Graduate Record Examination (GRE) for admission to regular status. Students who have either a low GPA or a low GRE score may be considered for admission to provisional status. GRE scores are required for consideration of admission. Additionally, students must have computer literacy.

In addition to meeting the general requirements for admission to the University and the Darden College of Education, applicants must have a bachelor’s degree from an accredited institution. Exercise science and wellness prerequisites are anatomy and physiology and exercise physiology. All emphasis areas require an undergraduate statistics course and computer competency.

Additional requirements for admission to the athletic training emphasis and the curriculum and instruction emphasis are listed in the section on that emphasis.

Exit. Students must (1) have an overall grade point average of 3.00; (2) have a grade point average of 3.00 in the major; (3) demonstrate writing proficiency; (4) satisfy all course competencies; (5) pass a comprehensive examination; (6) complete an internship or research project; and (7) have an exit interview with the program coordinator.

Athletic Training Emphasis

Bonnie Van Lunen, Graduate Program Director

This emphasis is designed to prepare athletic trainers for advanced study in the areas of research, clinical application, and education. Requirements for the emphasis are as follows (39 credits total):

Core Courses (19 credits)
ESPR 611 Analysis of Human Motion
ESPR 625 Clinical Biomechanics for Rehabilitation Professionals
ESPR 628 The Spine: Evaluation and Rehabilitation
ESPR 647 Education in Athletic Training
ESPR 649 Clinical Methods in Athletic Training
ESPR 691 Gross Anatomy for Sports Medicine Clinicians

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods

Requirements for different tracks are as follows:

Thesis Track (14 credits)
ESPR 698 Thesis
ESPR 699 Thesis
Eight hours of electives

Research-Problem Track (14 credits)
ESPR 636 Research Problems
Eleven hours of electives

For admission to the athletic training emphasis, the student must meet all other requirements for admission to the graduate program in physical education, and have the National Athletic Trainers’ Association Board of Certification (NATABOC) credential OR eligibility to take the NATABOC exam upon admission. Acceptance into the graduate school does not imply automatic acceptance into the athletic training emphasis area. The application deadline is February 1.

Curriculum and Instruction Emphasis

Linda Gagen, Coordinator

This emphasis is designed for current teachers of physical education and health education. Course work will provide opportunities for advanced study and research in the areas of curriculum design, teaching strategies, and assessment for application to physical education and health education classroom settings.

Requirements for the emphasis are as follows (36 credits):

Physical Education Core (15 credits)
ESPR 601 Adapted Physical Education Design and Supervision
ESPR 606 Instructional Effectiveness in Health and Physical Education
ESPR 620 Curriculum Development in Physical Education
ESPR 640 Principles and Concepts of Motor Learning or ESPR 639 Current Research in Motor Development
ESPR 645 Assessment and Evaluation in Physical Education

Physical Education Electives (9 credits) may be selected from the following courses:
(Additional graduate courses offered in ESPR, ELS, or ECI may be substituted on an individual basis in consultation with the advisor.)
ESPR 605 Principles of Movement Analysis in Team Sports for Physical Educ
ESPR 607 Principles of Movement Analysis in Indiv Sports for Physical Educ
ESPR 609 Principles of Movement Analysis in Dance for Physical Educ
ESPR 639 Current Research in Motor Development or ESPR 640 Principles and Concepts of Motor Learning
ESPR 680 Problems in Health Education
HE 581 Teaching of Sex Education in the School/Community
SMGT 660 Legal Aspects of Sports

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods

Requirements for the different tracks are as follows:

Research Option (6 credits)
ESPR 698 Thesis
ESPR 699 Thesis

Research-ProBLEM Track (15 credits)
ESPR 636 Research Problems

Requirements for the different tracks are as follows:

Non-Research Option (6 credits)
ESPR 667 Internship

Curriculum and Instruction Emphasis with Initial Virginia Licensure in Physical Education and Health Education

This emphasis is designed to provide an opportunity to earn initial Virginia licensure to teach physical education and health education. Course work will provide opportunities to fulfill many licensure requirements at the graduate level and will offer more advanced study and research in the areas of curriculum design, teaching strategies, and assessment for application to physical education and health education classroom settings.

Admission requirements for initial teacher licensure at the graduate level:
- Composite score of 532 on Praxis I.

Requirements for the emphasizing are as follows (36 credits):

Physical Education Core (15 credits)
ESPR 601 Adapted Physical Education Design and Supervision
ESPR 606 Instructional Effectiveness in Health and Physical Education
ESPR 620 Curriculum Development in Physical Education
ESPR 639 Current Research in Motor Development
ESPR 645 Assessment and Evaluation in Physical Education

Physical Education Electives (9-24 credits, minimum of 9 credits required)
There must be at least nine credits of electives earned at the graduate level for the master's degree. Additional credits above nine may be needed to satisfy licensure requirements. Licensure requirements may be fulfilled by undergraduate courses equivalent to the content material in these elective classes.

ESPR 605 Principles of Movement Analysis in Team Sports for Physical Education
ESPR 607 Principles of Movement Analysis in Individual Sports for Physical Education
ESPR 609 Principles of Movement Analysis in Dance for Physical Education
ESPR 640 Principles and Concepts of Motor Learning
ESPR 680 Problems in Health Education
EXSC 509 Exercise Physiology
HE 581 Teaching of Sex Education in the School/Community

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods

Requirements for the different tracks are as follows:

Research Option (6 credits)
ESPR 698 Thesis
ESPR 699 Thesis

Research-Problem Track (15 credits)
ESPR 636 Research Problems
Twelve hours of electives

Non-Research Option (6 credits)
ESPR 667 Internship

Additional licensure requirements

These courses or their equivalents are also required for licensure in Pre-K-12 physical education and health by the Commonwealth of Virginia.

BIOL 108N (Life Science) or 115N (General Biology I) and BIOL 250 (Anatomy and Physiology)
ECI 301 Social and Cultural Foundations of Education
EXSC 322 Anatomical Kinesiology/Human Anatomy
HE 230 Personal and Community Health
HE 224 First Aid

A passing composite score of 151 on the Praxis II Specialty Area Test of Health and Physical Education (Form 0856) is required for licensure and must be passed prior to the internship. Passing PRAXIS II scores must be attached to the teacher internship application. The final grade point average may not fall below 2.75 for these undergraduate prerequisites.

Exercise Science and Wellness Emphasis

Elizabeth Dowling, Graduate Program Director

This emphasis is designed for the student who desires to pursue advanced study in the scientific areas of health and physical education. The course work will help to strengthen the background of those individuals already involved in conducting fitness programs for various age groups or to prepare individuals for careers in other health-related fields that utilize exercise as preventive medicine.

Requirements for the emphasis are as follows (36 credits):

Core Courses (15 credits)
EXSC 528 Exercise Prescription for Chronic Diseases
ESPR 625 Clinical Biomechanics for Rehabilitation Professionals
ESPR 630 Exercise Physiology
ESPR 642 Clinical Exercise Testing and Prescription
ESPR 661 Seminar in Nutrition for Sports and Health

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods

Requirements for different tracks are as follows:

Thesis Track Courses (15 credits)
ESPR 698 Thesis
ESPR 699 Thesis
Nine hours of electives

Research-Problem Track (15 credits)
ESPR 636 Research Problems
Twelve hours of electives

Non-research Track (15 credits)
ESPR 667 Internship
Nine hours of electives.

Supportive electives may be chosen from a restricted list of courses in health, physical education and recreation, sports management, biology, or other areas of relevant study. The student will also select either a research or internship option.

Recreation and Tourism Studies Emphasis

Edwin Gómez, Coordinator

This emphasis is designed to prepare students and practitioners for advanced study in the research, management, and administration of managed recreation and tourism services. These individuals will be provided with the ability to implement social and economic impact research as well as pursue diverse careers within the global tourism industry.

Requirements for the emphasis are as follows (36 credits):

Core Courses (21 credits)
RTS 561 Economic and Social Dimensions of Tourism
RTS 575 Tourism and Cultural Heritage Management
RTS 616 Theory and Application in Recreation and Tourism
RTS 619 Strategic Marketing in Recreation and Tourism
RTS 638 Fiscal Planning and Management in Recreation and Sport
RTS 650 Contemporary Issues in Recreation, Sport, Health, and Physical Education
RTS 660 Legal Aspects of Sport

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods

Requirements of the different tracks are as follows:

Thesis Track (9 credits)
ESPR 698 Thesis
ESPR 699 Thesis
Three hours of electives

Research-Problem Track (9 credits)
ESPR 636 Research Problems
Six hours of electives

Non-research Track (9 credits)
ESPR 667 Internship
Three hours of electives

Sport Management Emphasis

Robert Case, Graduate Program Director

The emphasis is designed to prepare students for roles in sport management and administration. This program is approved and accredited through the North American Society for Sport Management (NASSM) and the National Association for Sport and Physical Education (NASPE).

Requirements for the emphasis are as follows:

Core Courses (24 credit hours)
SMGT 550 Ethics in Sport Management
SMGT 553 Sport Sponsorship and Event Planning
SMGT 555 Sport in Contemporary Society
SMGT 638 Fiscal Planning and Management in Sport and Recreation
SMGT 646 Sport Marketing
SMGT 652 Sport Facility Management
SMGT 660 Legal Aspects of Sport
SMGT 675 Leadership and Management in Sport

Research Core (6 credits)
ESPR 634 Statistics
ESPR 635 Research Methods
Requirements for the different tracks are as follows:

**Thesis Track Course (6 credits)**
- ESPR 698 Thesis
- ESPR 699 Thesis

**Research-Problem Track (6 credits)**
- ESPR 636 Research Problems
- Three hours of electives

**Non-Research Track Courses (6 credits)**
- SMGT 664 Fieldwork in Sport Management

Ph.D. in Biomedical Sciences with a Focus on Exercise Science

The Ph.D. in biomedical sciences focuses on advanced research and study in the areas of human physiology, biochemistry, immunology, or cardiovascular science with an emphasis in applied physiology and exercise science. This program is administered jointly with the Department of Biological Sciences. Contact the Department of Biological Sciences for applications.

**OCCUPATIONAL AND TECHNICAL STUDIES**

John M. Ritz, Chair

The Department of Occupational and Technical Studies offers five majors under the degree of Bachelor of Science in occupational and technical studies. The five bachelor's-level majors offered by the department are marketing education, technology education, training specialist, fashion, and industrial technology. At the graduate level, the department offers the degree of Master of Science in occupational and technical studies with majors in community college teaching (occupational and technical), business and industry training, and middle and secondary education teaching and a major within the Education Specialist in educational leadership. The department also offers minors in merchandising, training and development, and technology education, a certificate in industrial training, and licensure/endorsement programs in marketing teacher education, technology teacher education, vocational special needs education, industrial cooperative training, and vocational evaluation. The department provides a simulation-based instruction concentration in the Master of Science in Engineering modeling and simulation degree program.

Bachelor of Science–Occupational and Technical Studies Major

**Admission, Continuance, and Exit Requirements**

**Admission.** For admission to the bachelor's degree teacher licensure programs in marketing education and technology education, students must (1) complete at least one semester at Old Dominion University, (2) achieve a minimum grade point average of 2.75 on undergraduate course work completed at the time of application to the major with no grade less than C- in the major and the professional education core, (3) achieve passing scores on the Praxis I Academic Skills Assessment or Virginia Board of Education-approved SAT scores prior to enrollment in an education observation course (OTED 408), (4) present written recommendations from two faculty members from the Occupational and Technical Studies Department, and (5) have an interview with the program leader. For admission to the other bachelor's degree programs, students must (1) complete one semester at Old Dominion University, (2) achieve a minimum grade point average of 2.00 on undergraduate course work completed at the time of application to the major, and (3) have an interview with the program leader.

**Continuance.** Students in the teacher licensure programs must (1) satisfy University requirements; (2) maintain a 2.75 overall grade point average with no grade less than C- in the content area or the professional education core; (3) successfully complete OTED 297 and a student teaching interview; and (4) pass Praxis II prior to the teacher internship. The passing Praxis II scores must be attached to the teacher internship application. Students in other non-teacher education undergraduate majors must (1) satisfy University requirements, (2) maintain a 2.00 overall grade point average and (3) maintain a 2.00 grade point average in major courses.

**Exit.** Students in the two teaching licensure programs must (1) meet all University requirements for graduation including passage of the Exit Examination of Writing Proficiency and completion of the Senior Assessment and (2) have a grade point average of 2.75 overall and in the major, minor, and the professional education core, with no grade less than C-. Students majoring in the other non-teacher education undergraduate programs must (1) meet all University requirements for graduation, (2) have an overall grade point average of 2.00 and (3) have a grade point average of 2.00 in major and minor courses.

**Marketing Education Emphasis**

This 120-hour program is designed to prepare students to teach marketing and related subjects in the secondary schools. It is an approved program for meeting licensure requirements to teach marketing education in Virginia. The requirements are as follows:

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
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<tr>
<td>Oral Communication</td>
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<tr>
<td>Mathematics</td>
<td>3</td>
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<tr>
<td>Foreign Language</td>
<td>0-6</td>
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<tr>
<td>Computer Skills (OTS 251D required)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature (must substitute GEN 101)</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11</td>
</tr>
</tbody>
</table>

- Two semester sequence Natural Science-8 hours
- Additional 3 credits hours satisfied in the major by OTS 370T, Social Science (ECON 200S required)

**Technical Content Courses (36 hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>OTS 100 Sales Techniques</td>
<td>3</td>
</tr>
<tr>
<td>OTS 102 Advertising &amp; Promotion</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201 Accounting</td>
<td>3</td>
</tr>
<tr>
<td>OTS 202 Supervision of Personnel</td>
<td>3</td>
</tr>
<tr>
<td>OTS 208 Buying</td>
<td>3</td>
</tr>
<tr>
<td>OTS 220 Fashion Industry</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311 Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>OTS 370T Technology and Society (Writing Intensive)</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 402 Consumer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>OTS 309 Merchandise Retailing</td>
<td>3</td>
</tr>
<tr>
<td>OTS 415 Advanced Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>OTS 430 Technology Applications in Training</td>
<td>3</td>
</tr>
</tbody>
</table>

**Marketing Education Teaching Courses (34 Hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSE 413 Fundamentals of Human Development</td>
<td>3</td>
</tr>
<tr>
<td>OTED 297 Observation &amp; Participation</td>
<td>3</td>
</tr>
<tr>
<td>OTED 400 Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>OTED 401 Foundations of Vocational Education</td>
<td>3</td>
</tr>
<tr>
<td>OTED 403 Methods in Vocational Ed</td>
<td>3</td>
</tr>
<tr>
<td>OTED 408 Advanced Classroom Issues and Practices</td>
<td>3</td>
</tr>
<tr>
<td>OTED 485 Student Teaching</td>
<td>12</td>
</tr>
<tr>
<td>OTS 405 Directed Work Experience</td>
<td>3</td>
</tr>
<tr>
<td>OTS 450 Assessment, Evaluation and Improvement</td>
<td>3</td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

Option A: Approved minor, 12-24 hours; also second degree or second major

Option B: Cluster, 9 hours (3 hours may be in the major area of study)

Requirements for graduation include a minimum cumulative grade point average of 2.75 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.
Technology Education Emphasis

This 120-hour program is designed to prepare students to teach technology education subjects in the secondary and middle schools. It is an approved program for meeting licensure requirements to teach technology education in Virginia. Requirements are as follows.

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication 6
Oral Communication 3
Mathematics (MATH 102M and STAT 130M required) 6
Foreign Language 0-6
Computer Skills (OTS 251D required) 3
Fine and Performing Arts 3
History 3
Literature (must substitute GEN 101) 3
Philosophy 3
Natural Science and Technology 11

PHYS 101N and 102N required. Additional 3 credits are satisfied through the major by OTS 370T.
Social Science (PSYC 201S required) 3

Technical Content (42 hours)
OTS 112 Communication Design 3
OTS 250 Graphic Communication Processes 3
OTS 351 Communication Technology 3
OTS 221 Industrial Materials 3
OTS 231 Materials and Processes Technology 3
OTS 320 Manufacturing and Construction Technology 3
OTS 323 Production Technology 3
OTS 241 Energy Systems: Basic Electricity 3
OTS 242 Technological Systems Control 3
OTS 243 Energy and Power Technology 3
OTS 330 Medical, Agricultural and Bio-related Technologies 3
OTS 360 Transportation Technology 3
OTS 370T Technology and Society (Writing Intensive) 3
OTS 382 Industrial Design 3
OTS 417 Exploring Technology and Modern Industry 3

Technology Education Teaching Courses (28 hours)
ESSE 413 Fundamentals of Human Growth and Development 3
OTED 297 Observation and Participation 1
OTED 305 Curriculum for Technology Education 3
OTED 306 Methods for Technology Education 3
OTED 408 Advanced Classroom Issues and Practices 3
OTED 485 Student Teaching 12
OTS 450 Assessment, Evaluation and Improvement 3

UPPER DIVISION GENERAL EDUCATION
Option A: Approved Minor, 12-24 hours; also second degree or second major.
Option B: Cluster, 9 hours (3 hours may be in the major area of study)

Requirements for graduation include a minimum cumulative grade point average of 2.75 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Fashion Emphasis

This 120-hour program is designed to prepare students to enter the fashion industry to become buyers, fashion coordinators, and merchandise managers. Requirements are as follows.

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication 6
Oral Communication 3
Mathematics 3
Foreign Language 0-6
Computer Skills (OTS 251D required) 3
Fine and Performing Arts 3
History 3
Literature (must substitute GEN 101) 3
Philosophy 3
Natural Science and Technology 11

Two semester sequence - 8 hours
Additional 3 credits hours are satisfied through the major by OTS 370T.
Social Science (ECON 200S required) 3

Technical Content Courses (57 Hours)
ACCT 201 Principles of Accounting 3
MGMT 325 Principles of Management 3
MKTG 311 Marketing Principles and Problems 3
MKTG 402 Consumer Behavior 3
OTS 208 Merchandise Retailing 3
OTS 100 Sales Techniques 3
OTS 102 Advertising & Promotion 3
OTS 202 Supervision of Personnel 3
OTS 208 Buying 3
OTS 220 Fashion Industry 3
OTS 303 Social Aspects of Clothing 3
OTS 370T Technology and Society (Writing Intensive) 3
OTS 402 Training Methods 3
OTS 405 Directed Work Experience 3
OTS 415 Advanced Merchandising 3
OTS 422 Fashion Design 3
OTS 481 Occupational Career Transition 3
OTED 400 Instructional Systems and Development 3
Fashion Electives 19

Consult the departmental advisor for a list of courses used to satisfy this requirement.

UPPER DIVISION GENERAL EDUCATION
Option A: Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Industrial Technology Emphasis

This 120-hour program is designed to prepare students to enter industry as supervisors or technical managers or trainers. This major is also available through the University’s distance learning TELETECHNET system. Additional industrial technology technical emphasis tracks are available for TELETECHNET and transfer students. On approval of the program leader, select occupational and technical studies technical content areas from the community college can satisfy the 30 hours of technical content for this emphasis.

Requirements are as follows:

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication 6
Oral Communication 3
Mathematics (MATH 102M and STAT 130M required) 6
Foreign Language 0-6
Computer Skills (OTS 251D required) 3
Fine and Performing Arts 3
History 3
Literature (must substitute GEN 101) 3
Philosophy 3
Natural Science and Technology 11

PHYS 101N and 102N required. Additional 3 credits are satisfied through the major by OTS 370T.
Social Science (PSYC 201S required) 3

Technical Content-Industrial Emphasis (30 hours)
OTS 112 Communication Design 3
OTS 221 Industrial Materials 3
OTS 231 Materials and Processes Technology 3
OTS 241 Energy Systems: Basic Electricity 3
OTS 242 Technological Systems Control 3
OTS 243 Energy and Power Technology 3
OTS 321 Manufacturing Technology 3
OTS 323 Production Technology 3
OTS 351 Communication Technology 3
OTS 382 Industrial Design 3

Oral Communication 3
Written Communication 6

ACCT 201 Principles of Accounting 3
MGMT 325 Principles of Management 3
MKTG 311 Marketing Principles and Problems 3
MKTG 402 Consumer Behavior 3
OTS 208 Merchandise Retailing 3
OTS 100 Sales Techniques 3
OTS 102 Advertising & Promotion 3
OTS 202 Supervision of Personnel 3
OTS 208 Buying 3
OTS 220 Fashion Industry 3
OTS 303 Social Aspects of Clothing 3
OTS 370T Technology and Society (Writing Intensive) 3
OTS 402 Training Methods 3
OTS 405 Directed Work Experience 3
OTS 415 Advanced Merchandising 3
OTS 422 Fashion Design 3
OTS 481 Occupational Career Transition 3
OTED 400 Instructional Systems and Development 3
Fashion Electives 19

Consult the departmental advisor for a list of courses used to satisfy this requirement.

UPPER DIVISION GENERAL EDUCATION
Option A: Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.
Training Specialist Emphasis

This 120-hour program is designed to prepare students as training specialists who design, develop, and present training in business and industry. This major is also available through the University’s TELETECHNET distance learning system. On approval of the program leader, select business-related technical content areas from the community college can satisfy 30 hours of technical content for this emphasis. Requirements are as follows:

**LOWER DIVISION GENERAL EDUCATION**

<table>
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<td>Foreign Language</td>
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<td>Computer Skills (OTS 251D required)</td>
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<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature (must substitute GEN 101)</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11</td>
</tr>
<tr>
<td>Two semester sequence - 8 hours</td>
<td></td>
</tr>
<tr>
<td>Additional 3 credits hours are satisfied through the major by OTS 370T.</td>
<td></td>
</tr>
<tr>
<td>Social Science (ECON 200S required)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Technical Content Courses (45 Hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 201 Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 343 Human Services Methods</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 325 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 340 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 311 Marketing Principles and Problems</td>
<td>3</td>
</tr>
<tr>
<td>OTS 202 Supervision of Personnel</td>
<td>3</td>
</tr>
<tr>
<td>OTS 370T Technology and Society (Writing Intensive)</td>
<td>3</td>
</tr>
<tr>
<td>OTS 389 Adult Education and Training</td>
<td>3</td>
</tr>
<tr>
<td>OTS 402 Training Methods</td>
<td>3</td>
</tr>
<tr>
<td>OTS 405 Directed Work Experience or Community College Co-op</td>
<td>3</td>
</tr>
<tr>
<td>OTS 430 Technology Applications in Training or OTS 351 Communication Technology</td>
<td>3</td>
</tr>
<tr>
<td>OTS 450 Assessment, Evaluation and Improvement</td>
<td>3</td>
</tr>
<tr>
<td>OTED 400 Instructional Systems Development</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 2015 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 303 Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Training Electives</td>
<td>28</td>
</tr>
</tbody>
</table>

Consult the departmental advisor for a list of approved courses used to meet this requirement.

**UPPER DIVISION GENERAL EDUCATION**

| Option A. Approved Minor, 12-24 hours; also second degree or second major. | 9 |

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Minor in Merchandising**

The department offers a minor in merchandising for students majoring in other disciplines. Students must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. The minor requires 15 hours of course work including OTS 208, 303, 415, 422; MKTG 412 or OTS 309.

**Minor in Training and Development**

The minor in training and development is offered by the department for students majoring in other disciplines. Students must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and nine hours of the 300/400-level courses must be taken through courses offered by Old Dominion University. The minor requires 15 hours of course work as follows: OTED 400; OTS 389, 402, 430, 450.

**Minor in Technology Education**

The department offers a minor in technology education. Students must have a minimum overall cumulative grade point average of 2.00 (2.75 for teacher licensure) in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. The minor requires 18 hours of course work including the following: OTS 111, 243, 370T, 351, 382, 417.

**Certificate Program in Industrial Training**

This program is designed especially for military and civilian instructors and trainers. It is directed to those individuals who possess technical skills in the military, industry, career and technical centers, or community colleges. This certificate requires successful completion of the following 21 credit hours (seven courses): OTED 400; OTS 202, 351, 370T, 402; PSYC 303; COUN 343.

**Licensure/Endorsement Programs**

**Endorsement Program in Industrial Cooperative Training**

The endorsement program in industrial cooperative training is designed to prepare a licensed teacher to be endorsed to teach industrial cooperative training in the public schools.  

**Admission.** Prior to entering this program students must have or qualify for a Virginia Collegiate Professional or Postgraduate Professional License. Secondly, they must be interviewed and accepted by the program coordinator.

**Exit.** Students must (1) complete the following courses: ENGL 110C, OTED 305/400/500, OTED 401/501, OTED 306/403/503, OTED 408/508, OTED 425/525, and OTS 450/550; (2) earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level; and (3) document at least 4000 clock hours of acceptable employment in a trade, technical, or industrial education subject area completed within the past five years or complete OTS 405.  

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, middle and secondary teaching concentration.

**Licensure Program in Marketing Teacher Education**

The licensure program in marketing teacher education is designed to prepare a person who has a business-related baccalaureate degree to be a marketing education teacher-coordinator. Participants who successfully complete this program will qualify to apply for a Virginia teaching license to teach marketing education.  

**Admission.** Prior to entering this program students must hold a business-oriented baccalaureate degree in which 30 hours of marketing-related courses have been completed including at least three semester hours each of courses covering the marketing process, economics, personnel, sales process, operations and organization, and promotion. Students must also have completed a rigorous general education program as outlined by the Commonwealth in its Licensure Regulations for Teachers. They must be interviewed and accepted by the marketing edu-
cation program leader. Finally, students must attain or exceed the minimum score required by Virginia on the PRAXIS I examination. The PRAXIS I exam must be passed prior to admittance into teacher education and taking OTED 408/508.

**Exit.** Students must (1) complete the following courses: OTED 297, ESSE 413, OTED 400/500, OTED 401/501, OTED 408/508, OTS 450/550, and OTED 485; (2) earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level; and (3) document at least 4000 clock hours of marketing-related work experience completed within the past five years or complete OTS 405. Passing scores on PRAXIS II are required before teacher internship. Passing PRAXIS II scores must be attached to the teacher internship application.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, middle and secondary teaching concentration.

**Licensure Program in Technology Education**

The licensure program in technology teacher education is designed to prepare a person who has a baccalaureate degree and industrial/military related technical experience to be a technology education teacher. Participants who successfully complete this program will qualify to apply for a Virginia teaching license to teach technology education.

**Admission.** Prior to entering this program, students must hold a baccalaureate degree with a major related to technology/engineering or have completed military schools equaling to a minimum of 18 credits in industrial technology areas as evaluated by the American Council on Education (ACE Guide). Students must also have completed a rigorous general education program as outlined by the Commonwealth in its Licensure Regulations for Teachers. They must be interviewed and accepted by the graduate program director. Finally, students must attain or exceed the minimum score required by Virginia on the PRAXIS I examination. The PRAXIS I exam must be passed prior to admittance into teacher education and taking OTED 508, Advanced Classroom Issues and Practices.

**Exit.** Students must (1) complete the following courses: ESSE 513; ECI 569 (Foundations and Practicum in Education), 616 (Design for Effective Instruction), OTED 508, 566, 596, 635, 636, 730, 788, 789; OTS 112, 231, 250, 320, 351; and (2) earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level. Passing scores on PRAXIS II are required before teacher internship. Passing PRAXIS II scores must be attached to the teacher internship application.

Completing this licensure program and other departmental requirements will allow the candidate to earn the Master of Science in occupational and technical studies, middle and secondary teaching concentration.

**Endorsement Program in Vocational Special Needs Education**

The endorsement program in vocational special needs education is designed to prepare a person who holds a teaching license in a secondary education career and technical education program to teach vocational special needs education courses in Virginia. Students who successfully complete this program may apply for the Vocational Special Needs Add-on Endorsement.

**Admission.** Prior to entering this program, students must be endorsed to teach career and technical education or special education in the public schools. Secondly, they must have completed a course in English composition. Finally, they must be interviewed and accepted by the coordinator for the program.

**Exit.** Students must (1) complete the following courses: OTED 408/508, OTED 603, and OTED 604; (2) earn a 3.00 cumulative grade point average; and (3) document at least 4000 clock hours of occupational work experience completed within the past five years or complete OTS 405. Nine hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, middle and secondary teaching concentration.

**Endorsement Program in Vocational Evaluation**

The endorsement program in vocational evaluation is designed to prepare applicants to be endorsed as a vocational evaluator for employment in Virginia public schools.

**Admission.** Prior to entering this program, students must have or be working toward a master's degree in career and technical education evaluation, vocational education, special education, rehabilitation counseling, or related area. Secondly, they must be interviewed and accepted by the program coordinator.

**Exit.** Students must (1) complete the following courses: OTED 550, OTED 603, OTED 604, OTED 606, and (2) earn a 3.00 cumulative grade point average.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, middle and secondary teaching concentration.

**Master of Science—Occupational and Technical Studies**

John M. Ritz, Graduate Program Director

Students may obtain a Master of Science degree in occupational and technical studies through the Department of Occupational and Technical Studies. The department offers this graduate degree with three concentrations. These include community college teaching (occupational and technical), middle/secondary education teaching, and business and industry training. These studies are designed to help teachers and trainers upgrade their knowledge and skills and prepare for leadership roles in education and training.

**Admission, Continuance, and Exit Requirements**

**Admission.** All applicants to the master's in occupational and technical studies must meet University, college, and program requirements. In addition, all applicants must: (1) hold an undergraduate degree in a related field or have work experience in an occupational/technical area, (2) have an overall grade point average of 2.80 with a 3.00 in major courses, (3) complete the Graduate Record Examination with a score of 900 (verbal and qualitative sections combined) or the Miller Analogies Test with a score of 45, and (4) submit two letters of reference from former faculty or employers.

**Continuance.** Students must (1) complete the departmental Graduate Writing Proficiency Examination prior to the completion of nine credit hours and (2) maintain a minimum grade point average of 3.00.

**Exit.** Students in the community college teaching concentration must complete 39 semester hours and those in middle/secondary education teaching and business and industry training must complete 33 semester hours, to be distributed as described below. In addition, all students must (1) achieve an overall grade point average of 3.00; (2) complete all required competencies as listed on course syllabi; (3) pass the written comprehensive examination; (4) successfully complete a problems paper or thesis; and (5) complete an exit interview with the graduate program director. This degree may be earned through the University’s TELETECHNET distance learning program.

**Master of Science, Occupational and Technical Studies Concentrations (33-39 hours)**

**Common Core (9 hours)**

- OTED 785 Curriculum Development in Occupational Education and Training
- OTED 788 Instructional Strategies and Innovations in Training and Occupational Education
- OTED 789 Instructional Technology in Education and Training

**Concentration Specific Courses (6 hours, select one specialization)**

**Community College Teaching**

- OTED 760 Trends and Issues in Occupational Education
- OTED 761 Foundations of Adult Education and Training
- OTED 762 Administration and Management of Education and Training Programs

**Business and Industry Training**

- OTED 761 Foundations of Adult Education and Training
- OTED 762 Administration and Management of Education and Training Programs

**Middle and Secondary Teaching**

- OTED 760 Trends and Issues in Occupational Education
- OTED 762 Administration and Management of Education and Training Programs

**Research Component (6 hours)**

- OTED 635 Research Methods in Occupational and Technical Studies
- OTED 636 Problems in Occupational and Technical Studies

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Professional Specialization Electives (12-18 hours)
Community College Teaching (18 hours in teaching specialty)
Business and Industry Training (12 hours, approved by advisor)
Middle and Secondary Teaching (12 hours, approved by advisor)

Master of Science in Engineering—Modeling and Simulation Concentration, Simulation-Based Instruction

The Department of Occupational and Technical Studies offers the simulation-based instruction emphasis in the Master of Science in Engineering degree offered through the College of Engineering and Technology. Working with subject matter experts and modeling/simulation technical experts, trainers play an important role in the design, development, and testing of training simulations. The professional trainer’s role in simulations is to provide the training framework and pedagogy for the systematic development of training simulations. After the model or simulation has been designed, developed, and tested, the trainer becomes the prime user of the model or simulation as it is integrated into the trainer’s instructional strategies.

The simulation-based instruction emphasis helps students understand the training process that should be followed in planning, designing, testing, and implementing a training simulation so that it solves a predetermined performance problem. The courses in the emphasis include:
OTED 761 Foundations of Adult Education/Training
OTED 789 Instructional Technology in Education and Training
OTED 750 Training Issues and Problems in Modeling and Simulation
ENMA 762/862 Training Systems Engineering

Students must also select three hours from OTED 762 or 788 and complete OTED 785 as the capstone course. Should they choose to do their research in instruction, students must complete OTED 635 and 636.

For more information about the Master of Science in Engineering modeling and simulation concentration, refer to the Catalog section for the College of Engineering and Technology.

Education Specialist—Occupational and Technical Studies Specialty

The Department of Occupational and Technical Studies jointly offers the Education Specialist (Ed.S.) with the Department of Educational Leadership and Counseling. The program offers a cohesive sequence of academic studies designed to help graduates deal effectively with administrative problems encountered in urban schools and agencies.

Admission Requirements

To be admitted to the Ed.S. program, an applicant must:
1. Hold a master’s degree in career and technical education or related field;
2. Have a successful experience as an administrator or teacher;
3. Hold a teaching license or equivalent;
4. Have taken ELS 600 or its equivalent as a prerequisite.

Requirements for the Ed.S. with a specialty in occupational and technical studies include 30-33 semester hours (18 hours must be completed in 800-level courses in ELS), as follows:
1. ELS 600 (prerequisite); ELS 610, 621, 657 (prerequisites for principalship endorsement).
2. Eighteen credit hours in Educational Leadership, including ELS 853, 854, 871, 876, 877, 878, or 879.
3. Fifteen credit hours in Occupational and Technical Studies including OTED 860, 862, 885, 888, 889 and/or other courses approved by the candidate’s advisor.

Students must pass a written comprehensive examination and complete an exit interview with the graduate program director.
Frank Batten College of Engineering and Technology

Oktay Baysal, Dean
Berndt Bohm, Assistant Dean

Mission Statement

The Frank Batten College of Engineering and Technology promotes the advancement of engineering knowledge, both in creation and dissemination, by providing successful graduates and a continuously improving learning environment to its constituents, while maintaining high ethical, multicultural and global standards.

Overview

The College of Engineering and Technology at Old Dominion University offers degrees in engineering and in engineering technology. The course of study that leads to engineering degrees is characterized by a solid foundation in the theoretical underpinnings of engineering based in mathematics and physics. Graduates are well equipped to pursue graduate education, pursue professional registration, or enter the engineering profession. The course of study that leads to engineering technology degrees is characterized by strong laboratory experiences that will prepare the graduate to hit the ground running as a technical partner of the engineer who can implement advanced design and development concepts. The engineering technology degree is considered to be a terminal degree and graduates are not expected to pursue graduate degrees or professional registration, although they are not excluded from doing so.

The engineering and engineering education programs at Old Dominion University are specifically designed to take advantage of the unique assets in the Hampton Roads area. These assets include: 1) a strong military presence with multiple high technology facilities, in particular as it relates to modeling and simulation; 2) the NASA Langley Research Center with its focus on aeronautics and virtual environments; 3) the Jefferson Laboratories, a major center of nuclear physics and home of a major Free Electron Laser; 4) one of the major international deepwater ports on the east coast of the United States; 5) a major ship building and ship repair industry, including Newport News Shipbuilding, the only builder of nuclear aircraft carriers in the U.S.; 6) Virginia Beach, the largest city in the state of Virginia; and, 7) a major high technology industry base. These assets have enabled the development of distinctive engineering and technology curricula. Points of distinction (from other programs in and out of the state) include the following.

Career Advantage Program: Engineering and technology graduates get a head start on the engineering job market by preparing academically and experientially for their engineering and technology careers.

Engineering Up-Front: Freshmen immediately become engaged in practical engineering and technology activities through the one-year-long required course, Explore Engineering/Technology. Group projects allow students to experience the professional spectrum from idea generation through its translation into the design, manufacture and commercialization cycle. Students are discouraged from declaring a specific engineering discipline as a major until they have completed this course.

Multi-Disciplinary Industry Senior Project: Seniors may choose to join a multi-disciplinary team of students led by faculty and industry representatives to work on a project paid for by industry subject to specific deliverables and time and budget constraints.

Global Perspective: Students may choose to take the global engineering cluster that prepares them to be effective professionals in any place and with any culture. Students learn about alternative value and ethical systems, the professional regulations that affect engineering practice in the European community, NAFTA countries or in Pacific rim nations. They also learn how to use the appropriate technology and infrastructure to practice their profession.

Integrated 5-year Bachelor’s/Master’s Programs: The difference in lifetime earnings between the holder of a bachelor’s and a master’s degree may be in the millions of dollars. Students in the Frank Batten College of Engineering and Technology may be accepted into both a bachelor’s and master’s program at the freshman year through the junior year and receive both degrees in five years. The degrees need not be in the same field of engineering.

Doctor of Medicine Degree: Entering undergraduate and transfer students may apply for guaranteed admission to Eastern Virginia Medical School upon completion of their bachelor’s degree in engineering and technology.

Career Management Center: Students receive direct assistance in locating full- and part-time employment including co-op and internship opportunities through the college’s Career Management Center.

Professional Engineer (P.E.) Certification

The College of Engineering and Technology encourages all of its graduates to eventually be certified as Professional Engineers (P.E.). The certification requires taking the Fundamentals of Engineering (FE) Examination and the Professional Engineering (PE) Examination. All students are encouraged to take the FE Examination in their senior year after taking ENGN 401 Fundamentals of Engineering Review course. For details, contact the Dean’s Office and the following web sites: www.state.va.us/dpor; www.nspe.org.

For further information, please visit the college’s web site: www.eng.odu.edu.

Programs of Study

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Enterprise/Research Centers

These centers have been established to support the economic development of Hampton Roads by making University resources, including faculty and students, available to assist industry to solve technical problems and thus enhance the educational experience of the student.

Applied Research Center (ARC)

Mool C. Gupta, Director

ARC is an advanced materials science and engineering and laser technology research center. ARC has 18 research laboratories with equipment and facilities in excess of $5 million. The facilities at ARC constitute laboratories in: thin film technology, laser and plasma processing of materials, materials analysis, and devices and sensor fabrication. ARC is working on research projects that are sponsored by: Eastman Kodak Company, Siemens, BPSolar, Siemens Varian Vacuum, TAO systems, AMAC International, NASA Langley Research Center, Thomas Jefferson National Accelerator Facility, Virginia’s Center for Innovative Technology, Defense Advanced Research Projects Agency and the National Science Foundation. A collaboration with ARC provides in-depth and sophisticated educational experience for today’s students and tomorrow’s innovators and leaders. With a vigorous interdisciplinary academic program in association with industry, the college is able to provide students with an experience that integrates engineering education and industrial research. For more information: www.arc.odu.edu.
Center for Advanced Engineering Environments (CAEE)
Ahmed K. Noor, Director

The Center for Advanced Engineering Environments (CAEE) is a focal point for the diverse research activities pertaining to distributed collaborative synthesis and learning technologies and their application to future aerospace systems. These activities include the synergistic coupling of modeling, visual simulations, intelligent agents, multimedia and synthetic environments, human-computer interactions, computational intelligence, computational, information and collaboration technologies in the multidisciplinary analysis, sensitivity studies, optimization, and design and operation of future aerospace systems. CAEE has a 4m Vision Dome virtual reality facility along with internurse ultrasonic tracking, and its research staff has access to the CAVE and ImmersaDesk virtual reality facilities at NASA Langley. For more information: http://www.cee.odu.edu.

Langley Full-Scale Wind Tunnel (LFST)
J. Cross, Director

The tunnell is a full-scale facility for aerodynamic testing of ground, air, and sea vessel structures. LFST is the second-largest wind tunnel in the U.S. in terms of test section size and is one of the largest in the world. The Center for Experimental Aeronautics (CEA), a joint ODU/NASA Langley venture, provides a unique learning environment, where graduate students are teamed with NASA researchers and placed on NASA projects. CEA also provides practical instruction on leading edge instrumentation and experimental techniques. For more information: http://www.lfst.com

Technology Applications Center (TAC)
Jerry B. Robertson, Director

TAC is co-sponsored by Old Dominion University, Virginia’s Center for Innovative Technology, and Virginia’s A.L. Philpott Manufacturing Extension Partnership. The center identifies and focuses University resources on engineering and management problems. Activities include prototyping, customized testing, manufacturing process improvements, product development, sales and marketing, strategic planning, and performance benchmarking. These services include direct, applied science and engineering assistance in the solution of product, process, and system problems using traditional and innovative technologies, as well as the development and introduction of new technology through education and technical efforts in specific applications. For more information: www.tac.odu.edu.

Center for Continuing Engineering Education (C²E²)
John R. Calver, Director

C²E² supports and extends the professional development of engineers and technologists throughout Hampton Roads, the Commonwealth of Virginia, and beyond through forums, workshops, seminars, certificate programs, courses, and conferences. These programs consist of certificate programs, courses, and seminars designed to provide technical and engineering personnel an opportunity to further their personal objectives for life-long learning and professional development, increase their effectiveness within their organization, and prepare for licensing and certification. For more information: http://www.ce2.odu.edu.

Center for Advanced Ship Repair and Maintenance (CASRM)
Gary Schafer, Executive Director

CASRM applies technology to improving the productivity, environmental impact, and quality of ship maintenance and repair operations. The goal is to make ship repair operations more cost effective, while meeting or exceeding environmental regulatory constraints. The college operates the center in partnership with the South Tidewater Association of Ship Repairers (STASR). For more information: http://web.eng.odu.edu/webroot/orgs/Engr/collengineer.nsf/pages/enterprisecenters.

Center for Bioelectrics
Karl H. Schoenbach, Director

The Center for Bioelectrics capitalizes on Old Dominion University’s leadership role in this new field and the substantial amount of external support received from federal agencies in this area. The mission of the center is to increase scientific knowledge and understanding of the interaction of electromagnetic fields and ionized gases with biological cells and to apply this knowledge to the development of medical diagnostics, therapeutics, and environmental decontamination. The objectives of the center are to perform leading edge, interdiscipliary, and multi-institutional research, recruit top new faculty and top graduate students, support other institutional programs, support regional, national and international programs, boost external funding, and boost institutional visibility. For more information: http://www.odu.edu/engr/bioelectric.

National Center for Systems of Systems Engineering (NCSOSE)
Charles Keating, Director

The National Center for Systems of Systems Engineering (NCSOSE) is an enterprise center for Old Dominion University established to draw together academia, government, and industrial organizations to resolve problems, develop technologies, and direct research concerning major issues in the integration of complex systems of systems. NCSOSE was born out of a recognized need to effectively develop, coordinate, and integrate research and applications to engineer increasingly complex systems that must function as integrated systems of systems. NCSOSE’s primary objective is to advance the body of knowledge and state-of-the-art relating to engineering complex system of systems. NCSOSE supports the development of practical solutions and directs applied research that addresses contemporary system of systems engineering problems; provides high-quality information resources for those who make decisions, influence policy, and are charged with integration of complex systems of systems; and provides training and education in systems of systems engineering. NCSOSE frequently works in partnership with other research organizations and higher education institutions to enhance the quality of research in systems of systems engineering by promoting the interchange of academic research and knowledge.

Virginia Modeling, Analysis & Simulation Center (VMASC)
R. Bowen Loftin, Director of Simulation Programs

The center supports Department of Defense simulation and training technology development and conducts research to improve corporate and human performance. Recent programs include Port and Transportation Simulations, Visualization of Large-Scale Systems, Medical Modeling and Simulation, Distributed Simulations, and End-to-End Process Simulations. VMASC houses extensive facilities for interactive, three-dimensional graphics (Virtual Reality) as well as a “Battle Lab” for experimenting with applications of modeling and simulation in a number of domains. For more information: http://www.vmasc.odu.edu.

Virginia Space Flight Center (VSFC)
Billie Reed, Executive Director

VSFC is a Virginia, NASA, and Old Dominion University initiative to develop a commercial spaceport and to bring about a center for excellence in space operations. Suborbital and orbital missions with payloads of up to 9,000 pounds are projected for commercial uses. For more information: www.va-spaceflightcenter.org.

Research Centers and Institutes

Physical Electronics Research Institute (PERI). Directed by Hani Elsayed-Ali. The institute is designed to expand the research base in the physical electronics area and allow the University to offer students and faculty the opportunity to study and work in an advanced research environment. It serves the needs of scientific-based industrial and government enterprises. The institute resides in the Department of Electrical and Computer Engineering.

Coastal Engineering Center. Directed by David R. Basco. Coastal engineering involves the application of scientific knowledge (oceanography, geology, etc.) and economics to determine the feasibility of various alternative solutions to coastal problems. Key constraints are the environmental concerns of each alternative and the economic resources available toward finding a solution. Coastal engineers plan, design, construct and maintain coastal structures and facilities including shore protection works (seawalls, bulkheads, breakwaters, groinfields, dune/beach renourishments); navigation channel works (dredging, entrance jetties, sand bypassing plants); and port/harbor facilities (docks, quays, moorings).
Graduate work at the master's and Ph.D. levels with special emphasis in coastal engineering is offered by the Department of Civil and Environmental Engineering. The center aids the graduate program in this field by (1) giving further identity to the coastal program; (2) strengthening research proposals; (3) aiding projects requiring a multidisciplinary approach; and (4) offering services to outside civil/coastal consulting firms.

**Institute for Computational and Applied Mechanics/Institute for Scientific and Educational Technology.** Directed by Surendra Tiwari. Old Dominion University’s Institute for Computational and Applied Mechanics (ICAM) was established as a center of excellence in computational mechanics. The main goal of ICAM is to develop and maintain expertise in computational methods at Old Dominion University and to provide graduate education and training in this discipline, which is of interest both nationally and internationally. ICAM is a part of the Institute for Scientific and Educational Technology (ISET), which provides education, training, research, and consulting services in all areas of science and engineering. The institute resides in the Department of Mechanical Engineering.

**Center for Multidisciplinary Parallel-Vector Computation.** Directed by Duc T. Nguyen. The main goal of the Center for Multidisciplinary Parallel-Vector Computation (MPVC) is to develop and maintain expertise in developing parallel-vector numerical algorithms with broad applications to serve the needs of industries and national research laboratories (NASA Langley Research Center, Phillips Air Force Laboratory, Lawrence Livermore National Laboratory and NASA Lewis Research Center). A long-range goal of the MPVC is to provide graduate education and training for a new generation of researchers to respond to critical needs in the areas of high-performing parallel computations. This center resides in the Department of Civil and Environmental Engineering.

**SPECIAL PROGRAMS**

**Cooperative Education Program**

The cooperative education programs in the College of Engineering and Technology at Old Dominion University are accredited by the Accrediting Board for Engineering and Technology (ABET) and thus are of the highest academic quality. These programs allow students to combine academic study with professional-level training. Cooperative education positions are based on the alternating program style in which periods of full-time study are alternated with periods of full-time employment. Full-time employment periods must accumulate to the equivalent of one calendar year. Participation in the cooperative education program can be a source of financial support to help meet a substantial portion of college expenses. All departments in the College of Engineering and Technology heartily endorse the concept of cooperative education.

**Integrated Five-Year Bachelor’s/M.S. Programs**

**Opportunities for Employment and Graduate Studies**

According to a recent Income and Salary Survey by the National Society of Professional Engineers, increased education in the engineering fields results in higher earnings. In 1996, the median annual salary of respondents holding a bachelor's degree was $61,200, while the median annual salaries of those holding an M.S. and Ph.D. were $70,000 and $85,000, respectively. The objective of the integrated five-year bachelor’s/M.S. program is to allow qualified students simultaneous admission to a bachelor’s program in engineering or technology and a master’s degree in the same or complementary discipline leading to BOTH degrees in five years.

The combined degree program provides unique opportunities for students to be involved in industrial, governmental and academic research projects in areas of engineering and engineering technology where there is a great need for advanced technical expertise. Old Dominion University’s geographical proximity to such enterprises as the NASA Langley Research Center, the Newport News Shipyard, the Thomas Jefferson National Laboratory, the Defense Department’s Joint Training Analysis and Simulation Center, and Norfolk’s unique position as host to the largest Naval Base in the world, provides excellent opportunities for students in this program to be involved in practical engineering and applied research projects, while simultaneously pursuing a graduate degree.

In addition, this program prepares students for graduate or professional programs leading to a research and/or academic career. Graduates may apply for admission to Ph.D. programs in engineering or engineering management.

**Requirements for Admission**

**Freshmen:** Students seeking admission into the program at the beginning level must have a high school GPA of at least 3.00 or an SAT score of at least 1100. The minimum high school GPA acceptable (with an SAT score of 1100 or better) will be 2.75. The minimum SAT score acceptable (with a high school GPA of 3.00 or better) will be 1000.

**Junior Transfer Students:** Students admitted into the program must have a GPA of 3.00 or better in all course work attempted at the college(s) from which they are transferring.

**Rising Juniors and Seniors:** Old Dominion University students not admitted to the Integrated Five-Year Bachelor’s/M.S. Program who meet the continuation requirements listed below may apply.

**Students with baccalaureate degrees in disciplines other than engineering or technology:** These students must complete prerequisite requirements in their chosen engineering or technology department with a GPA of 3.00 or better in the engineering courses taken.

**Continuation Requirements**

Continuance in the program requires maintenance of a 3.00 GPA or better in all the engineering courses. In order to complete both degrees in five years, full-time student status must be maintained and attendance during the summer session at the end of the fifth year of study is required.

**Available Bachelor’s-Master’s Programs**

Combinations of all existing bachelor's and master's programs are possible. Some of these combinations may require prerequisite courses. Please see the Undergraduate Programs section and Graduate Programs section for a complete list and details.

For additional information on the Integrated Bachelor’s/M.S. programs, contact: Osama Kandil, Aerospace Engineering Department, Old Dominion University, Norfolk, VA 23529, (757) 683-3720, www.eng.odu.edu, e-mail: okandil@odu.edu.

**Bachelor’s in Engineering and Technology—Medical Doctor (ET/M.D.) Program**

Old Dominion University has two joint programs with Eastern Virginia Medical School designed to encourage outstanding and highly qualified students to receive a B.S. from Old Dominion University and an M.D. from Eastern Virginia Medical School. In the first track (ET/M.D.), the undergraduate degree is a bachelor’s degree in engineering or engineering technology, whereas in the second track (B.S./M.D.), a student can choose any of the undergraduate programs available at Old Dominion University.

The field of medicine is becoming increasingly more dependent on technology, as well as exploiting engineering and technology for its advancement. A medical professional, therefore, will have a clear advantage by having an educational background in engineering. Among numerous such examples is an orthopedic surgeon who understands the principles of tissue mechanics, or a neurosurgeon who understands electrical fields, or a medical researcher who has experience in computer modeling of either tissue mechanics or cardiovascular flows. With this impetus, the Frank Batten College of Engineering and Technology at Old Dominion University, in collaboration with Eastern Virginia Medical School, has developed the joint ET/M.D. program.

A student accepted into the ET/M.D. program will be placed in a select group of students who will pursue their engineering education supplemented by unique medical and research experiences to prepare them for the medical school. From those who successfully complete their freshman and sophomore years, a selected group will be given guaranteed positions at Eastern Virginia Medical School. Contingent upon completion of the bachelor’s program at Old Dominion University, students will automatically enter Eastern Virginia Medical School, thus reducing the academic pressure of preparing for entrance into medical school. Among the other advantages of the program are the following:

- Students who are awarded a guaranteed position in their junior year and complete the bachelor's portion of this program are not required to take the Medical College Admissions Test (MCAT).
- Several opportunities are available through this program to enhance exposure to the field of medicine. Students have an opportunity to serve as patient advocates at the various free clinics sponsored by EVMS. Also, the students attend special seminars by distinguished researchers in the field of medicine or engineering applications in medicine.
Eligibility and Selection of Students for the ET/M.D. Program

1. Applicants for the program should attain a combined Scholastic Aptitude Test (SAT) score of at least 1250, rank in the top ten percent of their high school class, and have an overall high-school grade point average of at least 3.50 on a 4.00 scale.

2. Applicants should indicate their interest in this program on their initial application to Old Dominion University. Upon the applicant's request, the secondary application, which is for additional information on academic and extracurricular achievements, reasons for choosing a career in medicine, prior exposure to the field of medicine, and objectives in gaining a position in this program, will be mailed directly from the Admissions Office at Old Dominion University.

3. At least two letters of evaluation from science and/or mathematics teachers are required. When relevant, additional reference letters written by others may be accepted, but these cannot replace the required reference letters.

4. A committee from Old Dominion University and Eastern Virginia Medical School review the applications. Qualified applicants may also be called for an interview.

5. In order to be considered for the subsequent fall semester entry to the ET/M.D. program, the deadline for receiving all credentials is March 1.

6. A student in this program must maintain a 3.50 grade point average (GPA) while at Old Dominion University. Students with a GPA between 3.00 and 3.50 are given provisional status in the program; they must attain a GPA of 3.50 within one semester and cannot return to provisional status in the future. A student with a GPA below 3.00 will be dropped from the program.

7. Students in this program must take the courses required by EVMS, one year of biology and two years of chemistry (including organic chemistry), and obtain grades of B or better. The program director at Old Dominion University's College of Engineering and Technology determines which courses appropriately meet these requirements.

8. Students in this program must complete the requirements for a bachelor's degree in engineering or engineering technology before beginning medical school.

9. Applicants must be a U.S. citizen or a permanent resident of the United States.

For more information, contact

Engineering and Technology/Medical Doctor (ET/M.D.)
Frank Batten College of Engineering and Technology
Old Dominion University, Norfolk, VA 23529-0236

Direct Bachelor's-to-Ph.D. and Integrated Bachelor’s/Ph.D. Programs

For a select number of exceptionally well-qualified students, the college has established an accelerated doctoral program that enables students to be admitted directly into the Ph.D. program upon completion of the baccalaureate degree. The total number of graduate course credits required is 48 plus a 24-credit dissertation. That is six credit hours shorter than the regular path, where a student obtains a master's degree and then pursues Ph.D. study. The philosophy of the college is that the quality of the dissertation is judged more by the quality of research performed, rather than by the number of courses taken.

A select number of exceptionally well-qualified students can be admitted to the Integrated Bachelor’s/Ph.D. program while they are pursuing their junior year in one of the undergraduate programs at Old Dominion University. This program encourages admitted students to work closely with individual faculty members during the remainder of their undergraduate program. Just as in the five-year Bachelor's/M.S. program, six credit hours of graduate course work may again be counted towards the undergraduate degree and doctoral course work mentioned above for the integrated Bachelor's/Ph.D. program. Therefore, the total graduate credit hours after obtaining the bachelor's degree at Old Dominion can be 42 credit hours of graduate courses plus a 24-credit dissertation. That is 12 credits shorter than the regular path. Students in these programs must maintain a GPA of 3.50 or better throughout their bachelor's and doctoral studies.

The student may opt to obtain the master's degree along the way to the doctorate. To obtain the master's degree, the student must utilize the six graduate credits obtained as part of their undergraduate program, use 18 credits of the graduate course work that is part of the Ph.D., and also write a master's thesis.

For additional information, contact:
Osama Kandil, Aerospace Engineering Department, Old Dominion University, Norfolk, VA 23529
(757) 683-3700, www.eng.odu.edu, E-mail: okandil@odu.edu

Wireless Telecommunications Certificate

This graduate certificate program provides the working professional with a thorough understanding of wireless telecommunications sufficient to practice and fill a need in this fast-moving and high demand technological field. Students in the program will take courses necessary to obtain the expertise to work in the area of wireless networking with an emphasis in wideband digital telecommunications. This will enable participants to understand the engineering disciplines and technology necessary to design and develop future voice, data and video systems utilizing wireless networks. These networks will incorporate mobile and fixed wireless systems. To obtain the certificate, each participant must successfully complete four three-credit graduate-level courses:

1. Wireless Telecommunications Networks
2. Digital Communications
3. Digital Signal Processing I
4. Introduction to Communications and Networks

Students enrolling in this program should have an undergraduate B.S. degree in electrical or computer engineering or computer science. Applicants with background and B.S. degrees in other engineering, math or science disciplines may qualify, but would need to consult with the department. In general, all applicants will be expected to have a background in mathematics at least through integral calculus, some knowledge of computer programming, general computer literacy, and knowledge of scientific and engineering methods. Practical working knowledge in the telecommunications area will be helpful. Students may also complete the certificate program as part of a master's degree in electrical engineering.

For additional information, contact: Stephen A. Zahorian, Electrical and Computer Engineering Department; (757) 683-3741; www.ece.odu.edu; E-mail: zsahoria@odu.edu

Coastal Engineering Certificate

In order to provide the opportunity to practicing civil/coastal engineers to further their knowledge and to become more competent in their profession, the Department of Civil and Environmental Engineering offers a non-degree Coastal Engineering Certificate program. Admission to the program will require a Bachelor of Science degree (or equivalent) in civil engineering, coastal engineering, or a related field. The program consists of the following four graduate courses (12 credit hours) that are taught over the course of two years (one each semester), and these courses are made available on-line via videostreaming:

CEE 582  Introduction to Coastal Engineering (Spring, Odd Year)
CEE 587  Dredging and Beach Engineering (Fall, Odd year)
CEE 782  Design of Coastal Structures (Fall, Even year)
CEE 788  Coastal Hydrodynamics and Sediment Transport (Spring, Even year)

An overall grade point average of 3.00 or better is required to earn the certificate.

For more information, contact David Basco, Civil and Environmental Engineering Department, (757) 683-3753; www.cee.odu.edu; E-mail: dbasco@odu.edu.

UNDERGRADUATE PROGRAMS

The Bachelor of Science in Civil Engineering, the Bachelor of Science in Computer Engineering, the Bachelor of Science in Electrical Engineering, the Bachelor of Science in Environmental Engineering, and the
Bachelor of Science in Mechanical Engineering are accredited as engineering programs by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

The Bachelor of Science in Engineering Technology has programs in civil engineering technology, electrical engineering technology, and mechanical engineering technology which are accredited as engineering technology programs by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

For the list of institutions accredited by ABET, refer to: www.abet.org/accreditation/accredit.htm.

ENGINEERING FUNDAMENTALS DIVISION

Linda Vahala, Director

The Engineering Fundamentals Division (EFD) is designed to provide support to students as they make the transition into the College of Engineering and Technology. All students are admitted to this division until they are prepared to successfully take courses in their major. While in this division, students receive individualized counseling, mentoring, and advising support designed to prepare them for success in their chosen engineering or technology major. A key experience for students in this division is the year-long course in the Fundamentals of Engineering. This group-oriented course uses hands-on projects to expose students to the spectrum of engineering practices from innovation through design, manufacture, and commercialization of a product or process. It also provides students with an opportunity to experience various aspects of engineering and have a basis for selecting their major.

Admission. Students who qualify for regular admission to the University will be accepted into EFD. Students in EFD may identify a desired degree program or may declare that they are undecided among engineering and engineering technology programs. They will be assigned a code classification, which indicates that they are enrolled and, if appropriate, which is their preferred program.

Matriculation into a Degree Program. Students should apply to the desired program during the semester in which they complete the requirements in the Engineering Fundamentals Division. Students will be notified of the admission decision before the start of the next term. To be eligible for admission into a degree program, students must (1) complete the courses Explore Engineering and Technology I and II, (2) complete at least 30 credit hours applicable toward a degree, (3) have an overall GPA of 2.00 or higher, and (4) meet any other additional degree program admission requirements. Normally, students are not eligible to enroll in major courses until they are accepted into the degree program. Students may petition to waive this rule when extenuating circumstances warrant.

Continuance. Students are eligible to continue in the EFD as long they (1) meet the continuance regulations of the University and (2) make reasonable progress toward matriculation into an engineering or engineering technology program. A student who has ceased reasonable progress toward matriculation into a college degree program will be notified in writing. One semester following this notification, if reasonable progress has not resumed, the student will be referred to Advising Services. A student who successfully completes the requirements must apply to and be accepted by a college degree program. Students not accepted into a degree program during a period of one semester beyond completion of the requirements will be referred to Advising Services.

Engineering Fundamentals—Engineering Technology Programs

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGN 110</td>
<td>Explore Engineering &amp; Technology I</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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<tr>
<td>CHEM 155N</td>
<td>Foundations of Chemistry I</td>
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<td>ENGL 110C</td>
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<td>Hum/SS</td>
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Freshman Second Semester (17 Credit Hours)

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<td>CHEM 117</td>
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<td>3</td>
</tr>
</tbody>
</table>

General Education – New Portal to Appreciating our Global Environment

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer than 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

All majors in the Frank Batten College of Engineering and Technology may substitute GEN 101 for a course in one of the following perspective areas: fine and performing arts, history, literature, philosophy or social science. Students should consult their advisors for additional information.

Advanced Placement

The University provides for possible advanced placement for up to 60 semester hours of course work. The student should refer to the advanced placement policy of specific departments (Mathematics and Statistics, Physics, Chemistry and Biochemistry, etc.) and the Policy for Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

Qualified students may take advanced placement examinations in certain courses in the various departments of the Frank Batten College of Engineering and Technology. The student should contact the chair of the department offering the course for information on applicability and approval.

Prospective freshmen are encouraged to take as many advanced placement courses as possible in high school. Further, prospective freshmen are encouraged to take as many AP examinations of the Educational Testing Service and CLEP examinations as possible. Qualifying scores on these examinations may result in advanced placement credit. However, freshmen should still consult with their faculty advisor before "skipping" courses given at Old Dominion University.

Transfer Students

Transfer students seeking admission to an engineering or engineering technology program at Old Dominion University must complete the standard admission procedures as established by the Office of Admissions.

Transfer students are usually in one of the following categories: (a) students who have completed some course work, but who have not completed associate degrees; and (b) students who have completed associate degrees in appropriate fields before transferring.

Certain special policies have been developed for students in category (b). If the overall educational background of the transfer student who has completed an associate degree is felt to be sufficiently strong to permit him or her to pursue upper-division work satisfactorily, a composite or "package" evaluation of transfer credit may be made. This approach will permit some flexibility in accommodating students with slightly different but equally appropriate backgrounds, dependent on the engineering or engineering technology program involved. Certain deficiencies can be made up while the student is pursuing upper-division studies.

To be admitted as a transfer student with departmental junior standing, the student should have either completed an associate degree in an acceptable program or received full credit for two years of work indicated by the completion of the equivalent number of semester hours in the chosen engineering or engineering technology curriculum with a grade of C or better in each course.

Continuance Regulations

It is the policy of the Departments of Civil and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering to deny a student eligibility to enroll in engineering courses after it becomes evident that he or she is either unable or unwilling to maintain reasonable standards of academic achievement. At the end of each semester, including summer sessions, the college reviews the records of all students.

1. A student will be placed on departmental academic probation whenever
CIVIL AND ENVIRONMENTAL ENGINEERING

A. Osman Akan, Chair and Chief Departmental Advisor

The Department of Civil and Environmental Engineering offers an undergraduate, four-year program leading to the Bachelor of Science in Civil Engineering. This program is accredited by the Accreditation Board for Engineering and Technology (ABET). Also, a four-year program leading to the Bachelor of Science in Environmental Engineering is offered. The department also offers a varied program of graduate study and research leading to the Master of Science, Master of Engineering and Doctor of Philosophy degrees with majors in civil or environmental engineering. Areas of specialization include coastal, environmental, geotechnical, hydraulic, and water resources engineering, and structural engineering. For further information, please visit the web site: cee.odu.edu.

Bachelor of Science in Civil Engineering

The professional activity in civil engineering deals with problems related to the health and welfare of society. Civil engineers in their planning and design often deal with architects, financiers, other engineers and scientists, public officials, and the public at large. Graduates in civil engineering are employed in consulting firms, construction firms, governmental agencies, and industries.

The curriculum in civil engineering is designed to provide education in fundamental engineering sciences, certain nontechnical subjects, and all major areas of civil engineering, which will serve as a basis for entrance into civil engineering practice and/or graduate study. Technical elective courses are available that allow pursuit of several programs of study or specialization: geotechnical, hydraulic, and water resources, and structural engineering. In addition, course work in General Education skills and perspectives is required to assure a well-rounded program of study.

Civil Engineering Program Outcomes

The program outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. The program outcomes have been established based on the program educational objectives, in consultation with the advisory council as documented in the minutes of the Civil and Environmental Engineering Visiting Council (CEVEC) meetings.

Students who qualify for graduation will:
1. Be proficient in mathematics through differential equations, probability and statistics, calculus-based physics, general chemistry, and engineering science and have the ability to apply knowledge in these areas to civil engineering problems.
2. Have ability to design and conduct experiments and to critically analyze and interpret data in various civil engineering fields.
3. Be able to develop design criteria to meet desired needs and to design a civil engineering system, component, or a process satisfying these criteria.
4. Have ability to function on multi-disciplinary teams.
5. Be able to identify and formulate an engineering problem, to collect and analyze relevant data, and to develop a solution.
6. Understand and appreciate professional and ethical responsibilities and professional practice issues such as procurement of work, bidding versus quality-based selection processes, and interaction between design and construction professionals.

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Civil Engineering Objectives

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The objectives of the civil engineering program are to produce graduates who will:
- practice civil engineering successfully in different professional settings,
- be able to pursue advanced studies in civil engineering or related fields,
- understand and effectively communicate technical, environmental, and social implications of civil engineering solutions,
- understand, appreciate, and be able to apply the state-of-the-art practice in civil engineering, and
- understand, appreciate, and apply engineering ethics.

Civil Engineering Curriculum*

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<tr>
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<tr>
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<td>Calculus I</td>
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</tr>
<tr>
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<td>Foundations of Chemistry</td>
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<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
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<tr>
<td>ENGN 110</td>
<td>Explore Engr &amp; Tech I</td>
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</tr>
<tr>
<td>Gen Ed-S</td>
<td>Social Science Perspective</td>
<td>3</td>
</tr>
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<tr>
<td>CS 150</td>
<td>Introduction to Programming</td>
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<td>Sophomore First Semester (17 Credit Hours)</td>
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<td>CEE 100</td>
<td>Statics</td>
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<tr>
<td>ME 220</td>
<td>Engr Mechanics II - Solid Mechanics</td>
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<td>ME 205</td>
<td>Dynamics</td>
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<td>CEE 240</td>
<td>Geo Information Sys in C&amp;E Engr</td>
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<td>Gen Ed-P</td>
<td>Philosophy Perspective</td>
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<tr>
<td>Junior First Semester (15 Credit Hours)</td>
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<tr>
<td>CEE 230</td>
<td>CE Materials</td>
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<td>CEE 305</td>
<td>C&amp;E Engineering Computations</td>
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<td>CEE 330</td>
<td>Hydromechanics</td>
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<td>CEE 350</td>
<td>Environ Pollution &amp; Control</td>
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<td>CEE 304</td>
<td>Intro Fund CEE Infrastruct Sys</td>
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<tr>
<td>Junior Second Semester (14 Credit Hours)</td>
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<tr>
<td>CEE 310</td>
<td>Structures I</td>
<td>3</td>
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</table>
Environmental Engineering Program Outcomes

The program outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. The program outcomes have been established based on the program educational objectives in consultation with the advisory council as documented in the minutes of the CEEVC meeting. They encompass the outcome requirements of Criterion 3 of ABET Criteria for Accrediting Engineering Programs. Students who qualify for graduation will:

1. Be proficient in mathematics through differential equations, probability and statistics, calculus-based physics, general chemistry, soil science, a biological science, engineering science, and fluid mechanics and have the ability to apply knowledge in these areas to environmental engineering problems.
2. Be able to design and conduct experiments and to critically analyze and interpret data in various environmental engineering focus areas.
3. Have ability to develop design criteria to meet desired needs and to design an environmental engineering system, component, or a process satisfying these criteria.
4. Have ability to function on multi-disciplinary teams.
5. Be able to identify and formulate an engineering problem, to collect and analyze relevant data, and to develop a solution.
6. Understand and appreciate professional and ethical responsibilities and understand professional practice issues such as procurement of work, bidding versus quality based selection processes, and interaction between design and construction professionals.
7. Be able to effectively present ideas and technical material to diverse audiences in writing, visually, and verbally.
8. Have the broad education necessary to understand the impact of engineering solutions in a societal and global context.
9. Understand the importance of professional licensure and commitment to life-long learning.
10. Have knowledge of current issues and awareness of emerging technologies.
11. Be able to use modern engineering techniques, skills, and tools including computer-based tools for environmental engineering analysis and design.
12. Have knowledge of fundamentals in the following focus areas: water supply and resources, environmental systems modeling, environmental chemistry, wastewater management, hazardous waste management, atmospheric systems and air pollution control, environmental and occupational health.
13. Be proficient in advanced principles and practice in water supply and resources, wastewater management, hazardous waste management, and atmospheric systems and air pollution control.
14. Have knowledge of fundamental concepts of waste minimization and pollution prevention.
15. Understand the roles and responsibilities of public institutions and private organizations in environmental management.
16. Be able to apply environmental systems and process modeling techniques.

In addition, the students will have had opportunities for work experience through internship, practicum, and cooperative education, for exposure to community service and for developing leadership skills.

Environmental Engineering Objectives

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the environmental engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Civil and Environmental Engineering.

The objectives of the Environmental Engineering program are to produce graduates who will:

- practice environmental engineering successfully in different professional settings,
- be able to pursue advanced studies in environmental engineering or related fields,
- understand and effectively communicate technical, environmental, and social implications of environmental engineering solutions,
- understand, appreciate, and be able to apply the state-of-the-art practice in environmental engineering, and
- understand, appreciate, and apply engineering ethics.

Environmental Engineering Curriculum*

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<td>CEE 410</td>
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<tr>
<td>Gen Ed</td>
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</tbody>
</table>

Total Credits: 125

* Does not include the University's General Education foreign language requirement. Additional hours may be required.

The General Education computer literacy requirement is met by courses in the major, CEE 403W meets the General Education oral communication requirement, and the second requirement in the natural science and technology perspective is met through the major.

Bachelor of Science in Environmental Engineering

Professional opportunities in environmental engineering have grown dramatically in recent years in response to public and governmental concerns about a decrease in the quality of the natural environment. Along with these concerns, there has been widespread recognition that prevention of further declines in environmental quality is necessary to maintain a healthy, sustainable habitat. Interest in improving environmental conditions and insuring against further declines has led to significant growth in the environmental field. Opportunities in consulting practice have included providing engineering services in the areas of water, wastewater, solid and hazardous waste, air pollution control, and hazardous site remediation. In addition, working as environmental program managers in industry, developing environmental policy and regulation within government, and pursuing a career path in environmental law are all areas that environmental engineers have been engaged in.

The curriculum in environmental engineering is designed to educate engineers in the fundamentals of physical, chemical, and biological processes. The curriculum is designed to develop the ability within students to understand the complex natures of natural and engineered systems and how to apply this understanding to the conception, analysis, and design of solutions to real-world environmental problems. In the senior year, a capstone design course culminates the degree program by having students work collaboratively to develop an engineering solution to a real-world environmental problem.

Environmental Engineering Curriculum*

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COLLEGE OF ENGINEERING AND TECHNOLOGY 175
Sophomore Second Semester (16 Credit Hours)

- ME 220  Engr Mechanics II - Solid Mech 3
- CEE 250  Principles of Environmental Engr 3
- MATH 307 (280)  Ordinary Diff Equations 3
- BIOL 115N  General Biology 4

Junior First Semester (15 Credit Hours)

- CEE 304  Intro Fund CEE Infrastruc Sys 3
- CEE 355W  Environmental Engr Analysis 3
- CEE 330  Hydromechanics 3
- CEE 305  C & E Engineering Computations 3
- CEE 320  CE Materials 3

Junior Second Semester (17 Credit Hours)

- CEE 322  Soil Mechanics 3
- CEE 340  Hydraulics & Water Resources 3
- CEE 335  CE Soils & Hydraulics Lab 1
- CEE 356  Public Health Engineering 3
- ENGN 401  FE Review 1
- Gen Ed-A  Fine & Performing Arts Perspective 3
- CEE 451  Water and Wastewater Treatment 3

Senior First Semester (15 Credit Hours)

- Gen Ed  Upper Level Requirement 1 3
- CEE 454  Hazardous Waste 3
- CEE 4xx  Environmental Engr Elective 3
- Gen Ed-P  Philosophy Perspective 3
- Gen Ed-L  Literature Perspective 3

Senior Second Semester (12 Credit Hours)

- Gen Ed  Upper Level Requirement 2 3
- Gen Ed  Upper Level Requirement 3 3
- CEE 452  Air Quality 3
- CEE 404  Environmental Engr Design Project 3

Total Credits 125

*Does not include the University's General Education foreign language requirement. Additional hours may be required.

ELECTRICAL AND COMPUTER ENGINEERING

Stephen A. Zahorian, Chair

The Department of Electrical and Computer Engineering offers an undergraduate, four-year program leading to the Bachelor of Science in Electrical Engineering. This program is accredited by EAC/ABET. An undergraduate, four-year program leading to the Bachelor of Science in Computer Engineering is offered jointly by the Department of Electrical and Computer Engineering and the Department of Computer Science. This program is also accredited by EAC/ABET.

The department also offers programs of graduate study leading to the degrees of Master of Engineering and Master of Science in electrical engineering and in computer engineering and Doctor of Philosophy in electrical and computer engineering. The Department of Electrical and Computer Engineering, in cooperation with the Department of Computer Science, offers programs of graduate study leading to the degrees of Master of Engineering and Master of Science with a major in computer engineering. Faculty members in Electrical and Computer Engineering are actively engaged in three major areas of research specialization (system science, physical electronics, and computer systems), and the department maintains extensive laboratory facilities to support this work. Areas of specialization include digital systems, automatic controls, speech communications, signal and image processing, photon semiconductor modeling, and fabrication, laser sensors, thin-film processing, bioelectronics, and plasma processing. For further information, please visit the web site: www.ece.odu.edu.

Bachelor of Science in Electrical Engineering

Vishnu K. Lakdawala, Chief Departmental Advisor

The electrical engineering undergraduate curriculum contains a solid foundation in networks, linear systems, electronics, electromagnetics, digital systems, and physical electronics. Adequate elective freedom is available to the senior student to allow specialization in areas selected from controls, communications, physical electronics, electromagnetics, and computers. Emphasis is placed on understanding principles through theoretical investigation and experimental verification. In addition, course work in General Education skills and perspectives is required to assure a well-rounded program of study.

Electrical Engineering Mission

The Department of Electrical and Computer Engineering at Old Dominion University is a partnership among students, faculty and staff in Service to the profession of Electrical and computer engineering through academic excellence, Research and real-world experiences, dedicated to a Vision of the future that includes Industry and community, Continuous improvement, and personal Enrichment and growth.

Program Outcomes

The electrical engineering program outcomes, posted on the Department's web site, at www.ece.odu.edu., and published in the ECE undergraduate handbook, are as follows.

Graduates must demonstrate the ability:
1. to apply knowledge of mathematics, science, and engineering.
2. to design and conduct experiments, as well as to analyze and interpret data.
3. to design a system, component, or process to meet desired needs.
4. to function on multi-disciplinary teams.
5. to identify, formulate, and solve engineering problems.
6. to understand professional and ethical responsibilities.
7. to communicate effectively.
8. through the broad education necessary, to understand the impact of engineering solutions in a global and societal context.
9. to engage in life-long learning, and understand the need for, and have the desire to engage in it.
10. to understand contemporary issues.
11. to use the techniques, skills, and modern engineering tools necessary for engineering practice.
12. to apply the knowledge of advanced mathematics of differential equations, linear algebra, complex variables, and discrete mathematics.

Electrical Engineering Objectives

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the electrical engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Electrical and Computer Engineering.

These objectives, posted on the Department's web site at www.ece.odu.edu and published in the ECE undergraduate handbook, are:

A. The required undergraduate curriculum will be broadly based so graduates will understand the impact of electrical engineering solutions to the relevant societal issues.
B. Graduates will be able to analyze and solve electrical engineering problems by applying fundamental knowledge of mathematics, science, and engineering using modern engineering methods.
C. Graduates will be able to identify, formulate, and solve electrical engineering problems using a process that includes the steps of planning, specification development, design, implementation, and verification to meet performance, cost, time, safety, and quality requirements.
D. Graduates will be able to design and conduct scientific and engineering experiments and be able to analyze and interpret the resulting data.
E. Graduates will be able to communicate and function, both individually and within multidisciplinary teams.
F. Graduates will have an understanding of professional and ethical responsibility.
G. Graduates will recognize the need for and will have the ability and the desire to engage in lifelong learning.

Electrical Engineering Curriculum*

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman First Semester (16 Credit Hours)</td>
<td></td>
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</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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</tr>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry</td>
<td>4</td>
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</table>

*Does not include the University's General Education foreign language requirement. Additional hours may be required.

The General Education computer literacy requirement is met by courses in the major. CEE 404 meets the General Education oral communication requirement, and the second requirement in the natural science and technology perspective is met through the major.
ENGN 110  Explore Engr & Tech I 2
Gen Ed  Fine and Performing Arts Perspective 3

**Freshman Second Semester (17 Credit Hours)**

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<tr>
<td>MATH 212</td>
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<tr>
<td>CS 150</td>
<td>Intro to Programming</td>
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<td>CHEM 117</td>
<td>Principles of Chemistry</td>
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<tr>
<td>PHYS 231N</td>
<td>University Physics</td>
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<td>ENGN 111</td>
<td>Explore Engr &amp; Tech II</td>
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**Sophomore First Semester (15 Credit Hours)**

<table>
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<th>Course Title</th>
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<tr>
<td>ECE 201</td>
<td>Circuit Theory I</td>
<td>3</td>
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<tr>
<td>MATH 307</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>University Physics</td>
<td>4</td>
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<tr>
<td>ECE 241</td>
<td>Digital Logic</td>
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</tr>
<tr>
<td>ECE 284</td>
<td>Digital Design Laboratory</td>
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**Sophomore Second Semester (16 Credit Hours)**

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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ECE 202</td>
<td>Circuit Theory II</td>
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<tr>
<td>ECE 286</td>
<td>Comp Aided Tools in ECE</td>
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<tr>
<td>ECE 313</td>
<td>Electronic Circuits</td>
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<td>ECE 382</td>
<td>Electronics Laboratory</td>
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<td>MATH 312</td>
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<td>History Perspective</td>
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**Junior First Semester (15 Credit Hours)**

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<tr>
<td>ECE 302</td>
<td>Linear Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 304</td>
<td>Probability, Statistics, &amp; Reliability</td>
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</tr>
<tr>
<td>ECE 332</td>
<td>Microelectronic Materials &amp; Processes</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 131C</td>
<td>Intro to Tech &amp;Science Writing</td>
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<tr>
<td>Gen Ed</td>
<td>Social Science Perspective</td>
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</tbody>
</table>

**Junior Second Semester (15 Credit Hours)**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ECE 323</td>
<td>Electromagnetics</td>
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</tr>
<tr>
<td>ECE 387</td>
<td>Microelectronics Fabric Lab</td>
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<tr>
<td>ECE 4XX</td>
<td>Technical Elective 1</td>
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<td>Engr</td>
<td>Nonmajor Engr Elective</td>
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**Senior First Semester (14 Credit Hours)**

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<tr>
<th>Course Number</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ECE 485W</td>
<td>EE Design I</td>
<td>2</td>
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<tr>
<td>ECE 4XX</td>
<td>Technical Elective 2</td>
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</tr>
<tr>
<td>Depth</td>
<td>Upper-Division Cluster</td>
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<tr>
<td>Depth</td>
<td>Upper-Division Cluster</td>
<td>3</td>
</tr>
<tr>
<td>Gen Ed</td>
<td>Literature Perspective</td>
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</tbody>
</table>

**Senior Second Semester (16 Credit Hours)**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGN 401</td>
<td>FE Review</td>
<td>1</td>
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<tr>
<td>ECE 486</td>
<td>EE Design II</td>
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<td>ECE 4XX</td>
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<tr>
<td>ECE 4XX</td>
<td>Technical Elective 4</td>
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<td>Elective</td>
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<tr>
<td>Depth</td>
<td>Upper-Division Cluster</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**: 125

*Does not include the University's General Education foreign language requirement. Additional hours may be required.

The General Education computer literacy requirement is met by courses in the major. ECE 485W/486 meet the General Education oral communication requirement. The second requirement in the natural science and technology requirement is met through the major.

**Bachelor of Science in Computer Engineering**

Vishnu K. Lakdawala, Chief Departmental Advisor

The computer engineering undergraduate degree program is designed to provide both a broad engineering background and a comprehensive foundation in the technical principles underlying the computer area. Students develop a background through course work in mathematics, the basic sciences, and general engineering. The technical core consists of course work from electrical engineering to address hardware aspects of computer engineering and course work from computer science to address software aspects. In addition, course work in General Education skills and perspectives is required to assure a well-rounded program of study.

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**Computer Engineering Mission**

The Department of Electrical and Computer Engineering at Old Dominion University is a partnership among students, faculty and staff in Service to the profession of Electrical and computer engineering through academic excellence, Research and real-world experiences, dedicated to a Vision of the future that includes Industry and community. Continuous improvement, and personal Enrichment and growth.

**Program Outcomes**

The computer engineering program outcomes, posted on the Department’s web site at www.ece.odu.edu and published in the ECE undergraduate handbook, are as follows.

Graduates must demonstrate the ability:
1. to apply knowledge of mathematics, science, and engineering.
2. to design and conduct experiments, as well as to analyze and interpret data.
3. to design a system, component, or process to meet desired needs.
4. to function on multi-disciplinary teams.
5. to identify, formulate, and solve engineering problems.
6. to understand professional and ethical responsibilities.
7. to communicate effectively.
8. through the broad education necessary, to understand the impact of engineering solutions in a global and societal context.
9. to engage in life-long learning, and understand the need for, and have the desire to engage in it.
10. to understand contemporary issues.
11. to use the techniques, skills, and modern engineering tools necessary for engineering practice.
12. to apply the knowledge of advanced mathematics of differential equations, linear algebra, complex variables, and discrete mathematics.
13. to apply advanced programming techniques to solve computer engineering problems.

**Computer Engineering Objectives**

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the computer engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Electrical and Computer Engineering.

These objectives, posted on the Department’s web site, at www.ece.odu.edu, and published in the ECE undergraduate handbook, are:

A. The required undergraduate curriculum will be broadly based so graduates will understand the impact of computer engineering solutions to the relevant societal issues.
B. Graduates will be able to analyze and solve computer engineering problems by applying fundamental knowledge of mathematics, science, and engineering using modern engineering methods.
C. Graduates will be able to identify, formulate, and solve computer engineering problems using a process that includes the steps of planning, specification development, design, implementation, and verification to meet performance, cost, time, safety, and quality requirements.
D. Graduates will be able to design and conduct scientific and engineering experiments and be able to analyze and interpret the resulting data.
E. Graduates will be able to communicate and function, both individually and within multidisciplinary teams.
F. Graduates will have an understanding of professional and ethical responsibility.
G. Graduates will recognize the need for and will have the ability and the desire to engage in life-long learning.

**Computer Engineering Curriculum**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry</td>
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<tr>
<td>ENGL 110C</td>
<td>English Comp</td>
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<tr>
<td>ENGN 110</td>
<td>Explore Engr &amp; Tech I</td>
<td>2</td>
</tr>
<tr>
<td>Gen Ed</td>
<td>Fine and Performing Arts Perspective</td>
<td>3</td>
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</tbody>
</table>

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**Bachelor of Science in Mechanical Engineering**

The mechanical engineering program is among the most basic of all engineering programs, with a curriculum that embraces the major areas of power, design, and mechanics. Seniors may enroll in one of three option areas: power/energy conversion, mechanical systems/design, or aerospace. The program is designed to prepare its graduates for professional practice in many facets of engineering, such as research, development, design, planning, testing, management, and consulting. The graduate is prepared to undertake challenging and creative engineering work in almost any industry, government agency, research organization, or consulting firm. The program also provides an excellent preparation for graduate school and the Fundamentals of Engineering (FE) Exam. An undergraduate student handbook providing rules and a detailed semester-by-semester plan for the program is available on the department website. Courses are routinely scheduled in the evening to accommodate working students. Interested persons should contact the Department of Mechanical Engineering (ME) at 683-6363.

**Mechanical Engineering Mission**

1. To develop and maintain high quality undergraduate program of study leading to the bachelor's degree in mechanical engineering.
2. To develop and maintain high quality graduate programs of study and research leading to the master's degree and doctoral degree in mechanical engineering and engineering mechanics.
3. To conduct a relevant and high quality research program in the mechanical engineering and engineering mechanics disciplines.
4. To provide practicing mechanical engineers in Virginia the opportunities to develop and maintain up-to-date technical knowledge and skills.
5. To provide the skills and knowledge uniquely those of the mechanical engineering profession to support existing government agencies, consulting firms and industry and help promote the development of more competitive and new industry in Virginia and the nation.

**Outcomes**

The Mechanical Engineering Department has adopted, after deliberations by its constituents, 13 outcomes for the BSME program of which 11 are ABET mandated. These outcomes are listed below.

1. An ability to apply knowledge of mathematics, science, and engineering.
2. Ability to design and conduct mechanical engineering experiments and function in multi-disciplinary teams.
3. Ability to design a mechanical engineering system, component, or a process to meet desired needs.
4. Function on multi-disciplinary teams.
5. Can identify and formulate an engineering problem, collect and analyze relevant data, and develop a solution.
6. Understand professional and ethical responsibility.
7. Have ability to present ideas and technical material in writing, visually, and verbally.
8. Have broad education necessary to understand the impact of engineering solutions in a societal and global context.
9. Understand the importance of professional licensure and have a commitment to life-long learning.
10. Have knowledge of current issues and awareness of emerging technologies.
11. Can use modern engineering techniques, skills, and tools necessary for engineering practice.
12. Have skills to solve problems that require knowledge of multivariate calculus and differential equations.
13. Have proficiency in commercially available software for thermal, fluid, mechanical design and project management engineering.

**Mechanical Engineering Objectives**

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the mechanical engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Mechanical Engineering. The five objectives of the mechanical engineering program are to prepare graduates who

1. are well prepared to successfully practice mechanical engineering

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**MECHANICAL ENGINEERING**

Jens Huang, Chair and Chief Departmental Advisor

The department offers an undergraduate program leading to a Bachelor of Science in Mechanical Engineering. The program is accredited by EAC/ABET. The department offers a varied program of graduate study and research leading to the Master of Engineering, Master of Science, and Doctor of Philosophy degrees with majors in both mechanical engineering and engineering mechanics. For further information, please visit the web site: www.mem.odu.edu.
2. are well prepared to pursue advanced studies,
3. understand and effectively communicate technical, environmental, and social implications of mechanical engineering solutions,
4. understand and apply the state-of-the-art practice in mechanical engineering, and
5. understand and apply engineering ethics.

**Mechanical Engineering Curriculum**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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<td>CHEM 115N</td>
<td>Foundations of Chemistry</td>
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<td>ENGN 110</td>
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<td>MATH 212</td>
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<td>PHYS 231N</td>
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<td>CS 150</td>
<td>Introduction to Programming</td>
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<td>ENGN 111</td>
<td>Explore Engr &amp; Tech II</td>
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<td>Freshman Second Semester (17 Credit Hours)</td>
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<tr>
<td>MATH 312 (285)</td>
<td>Calculus III</td>
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<tr>
<td>ME 204</td>
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<td>ME 201</td>
<td>Materials Science</td>
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<td>ME 203</td>
<td>ME Lab I-Materials</td>
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<td>ME 100</td>
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<td>ME 205</td>
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<td>ME 220</td>
<td>Engr Mechs II-Solid Mechs</td>
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<td>Philosophy Perspective</td>
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<tr>
<td>ME 311</td>
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<td>ME Lab III-Thermo/Fluids</td>
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<td>Computational Methods in ME</td>
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<td>ME 101</td>
<td>History Perspective</td>
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<tr>
<td>ME 312</td>
<td>Thermodynamics II</td>
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<td>ME 332</td>
<td>Mechanical Engineering Design I</td>
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<td>ME 315</td>
<td>Heat and Mass Transfer</td>
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<td>ENGN 401</td>
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<td>Fine and Performing Arts Perspective</td>
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<td>ME 434W</td>
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<td>ME 433</td>
<td>Mechanical Engineering Design II</td>
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<td>ME 436</td>
<td>Dynamic Systems &amp; Control</td>
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<tr>
<td>General</td>
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*Does not include the University’s General Education foreign language requirement. Additional hours may be required.

General Education computer literacy requirement is met by courses in the major. ME 434W meets the General Education oral communication requirement, and the second requirement in the natural science and technology perspective is met through the major.

**ENGINEERING TECHNOLOGY**

Gary R. Crossman, Chair

The primary goal of the Department of Engineering Technology and its programs is to provide a general yet sufficiently specialized education to equip the student for immediate employment in a variety of engineering and technical fields. In general, the engineering technology programs provide an opportunity for students who desire a technical undergraduate education with an emphasis directed toward applications of engineering knowledge to solve actual industrial problems. As a result, the engineering technology programs emphasize the practical application of technical knowledge with a strong laboratory program supporting the lecture content of the courses. For further information, please visit the department web site: www.et.odu.edu.

The Department of Engineering Technology offers two program categories leading to the Bachelor of Science in Engineering Technology degree. The first program category is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC-ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202 - Telephone (410) 347-7700. Graduates of TAC of ABET accredited programs are eligible to take the Fundamentals of Engineering (FE) or the Fundamentals of Land Surveying (FLS) examination in Virginia and in most states. This exam is the first step to licensure as a professional engineer. There are several concentration areas for the TAC of ABET Bachelor of Science in Engineering Technology degree: civil engineering technology (including options in construction management, structural design, and surveying and site development), electrical engineering technology (including options in electrical systems and computer engineering technology), mechanical engineering technology (including options in manufacturing, mechanical systems design, and nuclear engineering technology).

The Department of Engineering Technology also offers a second type of degree program: the Bachelor of Science in Engineering Technology with a concentration in general engineering technology (GET). This option is designed primarily to meet the needs of students who have an associate in applied science degree in a technical field from a community college. The diverse technical education and career background of these students often requires an interdisciplinary mixture of courses utilizing more than one engineering technology field to meet specific educational and career objectives. The GET degree option meets this objective. GET degree options include technical operations management, electromechanical systems, computer and network operations, automation and control systems, construction management, and geomatics/geographical information systems. Other options may be developed in coordination with the general engineering technology degree advisor.

All upper-level courses required for all engineering technology programs are delivered via distance learning through ODU's TELETECHNET system. Thus, students may complete degree requirements without attending the main campus.

**Computer Requirement for Engineering Technology Students**

The computer and the Internet are essential elements in today’s educational environment and this trend will continue and accelerate in the future. While the University provides many computer facilities on campus and at distance learning sites, the department’s programs make it impractical for a student to accomplish all computer-related assignments using only these resources. Therefore, all engineering technology majors are expected to either own a personal computer or have access to a computer on which course software can be installed and used along with Internet access.

**Civil Engineering Technology**

Vernon W. Lewis, Jr., Program Director

The civil engineering technology (CET) program is a TAC of ABET accredited program that offers options in construction management, structural design, and surveying and site development. Students in this program are prepared for employment in a wide range of professional and technical positions with the construction, consulting engineering, surveying and development industries. Graduates are eligible to take the
Civil Engineering Technology Program Goals and Objectives

The goals and objectives of the Civil Engineering Technology program are listed below. The success of these goals and objectives is determined through the evaluation of performance in tests, evaluation of senior capstone project courses, performance on the FE exam (for those who take it) and the continued evaluation of the performance and career achievements of alumni.

1. Develop the students' capabilities with an emphasis on state-of-the-art applications in one of the following areas: building structures design, construction operations, or surveying and site development.

2. Provide sufficient instruction for graduates to function in an entry-level position involving applied planning and design, field testing and inspection, on-site technical coordination and control, and other positions relevant to their emphasis area.

3. Develop the students' basic technical skills expected of all four-year civil engineering technology graduates.

4. Provide sufficient general education studies, including liberal arts, to permit the graduate to communicate effectively and to function as a responsible citizen.

5. Provide an opportunity for two-year associate degree-level technicians from civil, construction, drafting and design, and surveying programs to pursue baccalaureate-level education in the civil engineering technology field.

6. Provide a national role model in the development and implementation of distance learning.

Civil Engineering Technology Curriculum*

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 100</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>ENGN 110</td>
<td>Explore Engineering &amp; Technology I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>MET 230</td>
<td>Computer-Aided Drafting</td>
<td>3</td>
</tr>
<tr>
<td>ENGN 111</td>
<td>Explore Engineering &amp; Technology II</td>
<td>2</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
<td>3</td>
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Freshman Second Semester (15 Credit Hours)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MET 330</td>
<td>Statics</td>
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<tr>
<td>PHYS 112N</td>
<td>General Physics II</td>
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</tr>
<tr>
<td>ENGL 131C</td>
<td>Technical &amp; Scientific Writing</td>
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<tr>
<td>Gen Ed</td>
<td>Social Science Perspective (S)</td>
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</tr>
<tr>
<td>CEE 310</td>
<td>Fundamentals of Building Construction</td>
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</tr>
<tr>
<td><strong>CET 301</strong></td>
<td>Structural Analysis</td>
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<tr>
<td><strong>CET Elective</strong></td>
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<tr>
<td>MET 330</td>
<td>Fluid Mechanics</td>
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<tr>
<td>MET 335</td>
<td>Fluid Mechanics Laboratory</td>
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<tr>
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<td>Upper-Division Cluster or Minor</td>
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| Junior Second Semester (16 Credit Hours)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CEE 340</td>
<td>Soils &amp; Foundations</td>
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<tr>
<td>CEE 341</td>
<td>Soils Testing &amp; Inspection</td>
<td>1</td>
</tr>
<tr>
<td>*<strong>CET 360</strong></td>
<td>Plans and Specifications</td>
<td>3</td>
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<tr>
<td><strong>CET Elective</strong></td>
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<tr>
<td>MET 310</td>
<td>Dynamics</td>
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<tr>
<td>ENMA 302</td>
<td>Engineering Economics</td>
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Senior First Semester (16 Credit Hours)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>CET 440</strong></td>
<td>Contract Documents</td>
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<tr>
<td><strong>CET 450</strong></td>
<td>Structural Steel Design</td>
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<td><strong>CET Elective</strong></td>
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<tr>
<td>Gen Ed</td>
<td>History Perspective (H)</td>
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<tr>
<td>ENMA 401</td>
<td>FE Review</td>
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Senior Second Semester (16 Credit Hours)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>CET 440</strong></td>
<td>Computer Applications in Structural Design</td>
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<tr>
<td><strong>CET 410</strong></td>
<td>Reinforced Concrete Design</td>
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<tr>
<td>CEE 475W</td>
<td>Senior Design Project</td>
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<td><strong>CET Elective</strong></td>
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<tr>
<td>***Gen Ed</td>
<td>Upper-Division Cluster or Minor</td>
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<tr>
<td>Gen Ed</td>
<td>Fine &amp; Performing Arts Perspective (A)</td>
<td>3</td>
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</tbody>
</table>

TOTAL 127

*Does not include the University's General Education foreign language requirement. Additional hours may be required.

**Students in the surveying and site development option will replace these courses by surveying courses as specified by the surveying coordinator.

***One or more additional courses will be required to complete the minor. See advisor for details.

****Students with an interest in construction may substitute an alternate course with approval of their advisor.

Electrical Engineering Technology

John R. Hackworth, Program Director

The electrical engineering technology (EET) program is a TAC of ABET accredited program and contains both an electrical systems technology option and a computer engineering technology option. Students in either option take courses in dc and ac circuits, electronic devices and circuits, digital electronics, linear electronics, microprocessors, and C++ programming. Supporting laboratories provide experience in instrumentation, testing and trouble-shooting, and design and implementation. Graduates should be qualified for application positions in electronic and electrical product design and development, electronic and electrical system operation and maintenance, field operations, and various other technical functions.
Electrical Engineering Technology Program Goals and Objectives

The goals and objectives of the Electrical Engineering Technology program are listed below. The success of these goals and objectives is determined through the evaluation of performance in tests, evaluation of senior capstone project courses, performance on the FE exam (for those who take it) and the continued evaluation of the performance and career achievements of alumni.

1. Develop the students' capability to apply existing engineering methods and practices for the purpose of product development and improvement, manufacturing, testing, operation, and field support.
2. Provide opportunities for two-year associate-degree level engineering technicians to pursue baccalaureate-level education in their fields of study.
3. Provide in-depth education in the fundamental technical facets of electrical and electronic theory.
4. Provide technical depth in the applied areas of analog and digital electronics, microprocessors, and other electronic specialty areas.
5. Provide sufficient general and liberal arts education to permit graduates to communicate effectively and to function as a responsible citizen.
6. Provide a national role model in the development and implementation of distance learning.

Electrical Engineering Technology Curriculum*

Electrical Systems Technology Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 120</td>
<td>Logic Circuits &amp; Microprocessors</td>
<td>3</td>
</tr>
<tr>
<td>EET 125</td>
<td>Logic &amp; Microprocessor Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>ENGN 110</td>
<td>Explore Engineering &amp; Technology I</td>
<td>2</td>
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<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
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<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
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<td>Gen Ed</td>
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Freshman First Semester (16 Credit Hours)

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<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EET 110</td>
<td>Electrical Circuits I</td>
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<tr>
<td>ENGN 111</td>
<td>Explore Engineering &amp; Technology II</td>
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</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
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<tr>
<td>PHYS 111N</td>
<td>General Physics</td>
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<tr>
<td>ENGL 131C</td>
<td>Technical &amp; Scientific Writing</td>
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Freshman Second Semester (15 Credit Hours)

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<td>EET 200</td>
<td>Electrical Circuits II</td>
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<td>EET 205</td>
<td>Circuits Laboratory</td>
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<tr>
<td>EET 210</td>
<td>Electronic Devices &amp; Circuits I</td>
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<td>MATH 211</td>
<td>Calculus I</td>
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Sophomore First Semester (16 Credit Hours)

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<td>Electronic Devices &amp; Circuits II</td>
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<td>EET 225</td>
<td>Electronics Laboratory</td>
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<td>Gen Ed</td>
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<td>COMM 101R</td>
<td>Public Speaking</td>
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Sophomore Second Semester (15 Credit Hours)

<table>
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<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EET 300</td>
<td>Advanced Circuit Analysis</td>
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<td>EET 310</td>
<td>Digital Electronics</td>
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<tr>
<td>EET 315W</td>
<td>Digital Electronics Laboratory</td>
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<tr>
<td>EET 360</td>
<td>Electrical Power &amp; Machinery</td>
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<td>EET 365W</td>
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<td>Gen Ed</td>
<td>History Perspective (H)</td>
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Junior First Semester (16 Credit Hours)

<table>
<thead>
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<tbody>
<tr>
<td>EET 305</td>
<td>Advanced Technical Analysis</td>
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<tr>
<td>EET 320</td>
<td>Microprocessors &amp; Microcontrollers</td>
<td>3</td>
</tr>
<tr>
<td>EET 325</td>
<td>Microprocessor Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>EET 330</td>
<td>Linear Electronics</td>
<td>3</td>
</tr>
<tr>
<td>EET 340</td>
<td>Transmission Networks</td>
<td>3</td>
</tr>
<tr>
<td>ENGN 401</td>
<td>FE Review</td>
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Senior First Semester (17 Credit Hours)

<table>
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<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>EET 335</td>
<td>Linear Electronics Laboratory</td>
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<td>EET</td>
<td>Senior Electives</td>
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<td>Literature Perspective (L)</td>
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Senior Second Semester (15 Credit Hours)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 480W</td>
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<td>EET</td>
<td>Senior Elective</td>
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<tr>
<td>*Minor Courses</td>
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<tr>
<td>Gen Ed</td>
<td>Philosophy Perspective (P)</td>
<td>3</td>
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</tbody>
</table>

TOTAL 126

*Does not include the University's General Education foreign language requirement. Additional hours may be required.
*CHEM 115N is recommended, especially for those who plan to take the Fundamentals of Engineering Examination.
*Students who earn grades of C or below in MATH 162M/163 should take MATH 205/206 instead of MATH 211.
*Students are encouraged to take a minor in either engineering management or mechanical engineering technology to meet the upper-division General Education requirement.

Computer Engineering Technology Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 120</td>
<td>Logic Circuits &amp; Microprocessors</td>
<td>3</td>
</tr>
<tr>
<td>EET 125</td>
<td>Logic &amp; Microprocessor Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>ENGN 110</td>
<td>Explore Engineering &amp; Technology I</td>
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</tr>
<tr>
<td>MATH 162M</td>
<td>Precalculus I</td>
<td>3</td>
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<tr>
<td>ENGL 110C</td>
<td>English Composition</td>
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<td>Gen Ed</td>
<td>Social Science Perspective (S)</td>
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Freshman Second Semester (15 Credit Hours)

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<tr>
<th>Course Number</th>
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<tbody>
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<td>ENGN 111</td>
<td>Explore Engineering &amp; Technology II</td>
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<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
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<td>PHYS 111N</td>
<td>General Physics</td>
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<tr>
<td>ENGL 131C</td>
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Sophomore First Semester (16 Credit Hours)

<table>
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<th>Course Number</th>
<th>Course Title</th>
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<tbody>
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<td>EET 200</td>
<td>Electrical Circuits II</td>
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<td>EET 205</td>
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</tr>
<tr>
<td>EET 210</td>
<td>Electronic Devices &amp; Circuits I</td>
<td>3</td>
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<tr>
<td>PHYS 112N</td>
<td>General Physics</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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<tr>
<td>CS 250</td>
<td>Problem Solving &amp; Programming</td>
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<tr>
<td>CS 252</td>
<td>Introduction to UNIX</td>
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Sophomore Second Semester (15 Credit Hours)

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<th>Course Title</th>
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<td>COMM 101R</td>
<td>Public Speaking</td>
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</tr>
<tr>
<td>Gen Ed</td>
<td>Fine &amp; Performing Arts Perspective (A)</td>
<td>3</td>
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</tbody>
</table>
Junior Second Semester (16 Credit Hours)
EET 305 Advanced Technical Analysis 4
EET 320 Microprocessors & Microcontrollers 3
EET 325 Microprocessor Laboratory 2
EET 330 Linear Electronics 3
CS 451 Software Engineering Survey 3
ENGN 401 FE Review 1

Senior First Semester (17 Credit Hours)
EET 335 Linear Electronics Laboratory 2
ComET Senior Electives 6
CS Senior Electives 6
Gen Ed Literature Perspective (L) 3

Senior Second Semester (15 Credit Hours)
EET 480W Senior Project 3
ComET or CS Senior Elective 3
COMM 101R Public Speaking 3
Gen Ed Fine & Performing Arts Perspective (A) 3
Gen Ed Philosophy Perspective (P) 3

TOTAL 127

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*CHEM 115N is recommended, especially for those who plan to take the Fundamentals of Engineering Examination.
*Students who earn grades of C or below in MATH 162M/163 should take MATH 205/206 instead of MATH 211.

Mechanical Engineering Technology
Gary R. Crossman, Program Director

The mechanical engineering technology program is accredited by TAC of ABET and offers options in manufacturing systems, mechanical system design and nuclear engineering technology. Students in these options take common courses in areas such as computer-aided drafting, statics, strength of materials, dynamics, thermodynamics, fluid mechanics, automation and controls, and computer solid modeling. The program culminates in a senior project that integrates course work with a practical project assignment in the student's area of interest. To satisfy the upper-division general education requirements, students are encouraged to complete a minor in engineering management. Students in mechanical engineering technology are prepared for a range of technical positions including system design, fabrication, manufacturing, HVAC (heating, ventilating and air conditioning), and construction.

Manufacturing Option: Along with the courses previously mentioned, various senior electives are available in the manufacturing areas such as robotics, computer numerical control in production, and advanced manufacturing processes. Graduates of the manufacturing systems option are prepared for employment in a wide range of professional and technical positions at both large and small companies in areas such as manufacturing engineering, quality control, production management, test engineering, and maintenance management.

Mechanical System Design Option: The mechanical system design option provides the skills for career success in designing, building, and installing mechanical systems of all descriptions including thermal and air conditioning systems, automated production equipment, and power systems. Graduates of this option are prepared for careers in system design with engineering, fabrication, and technical support in both the public and private sectors in positions such as designer, engineer, CAD analyst, and technical analyst.

Nuclear Engineering Technology Option: The nuclear engineering technology option is a special program available only to graduates of the U.S. Navy Nuclear Power School or courses related to nuclear power plant operation through Dominion Energy. These students receive advanced standing credits that apply to the MET degree based on their professional education in nuclear power systems.

Mechanical Engineering Technology Program Goals and Objectives

The goals and objectives of the mechanical engineering technology programs are listed below. The success of these goals and objectives is determined through the evaluation of performance in tests, evaluation of senior capstone project courses, performance on the FE exam (for those who take it) and the continued evaluation of the performance and career achievements of alumni.

1. Provide a strong core of lower-level applied mechanical design courses to develop in the student an understanding of design fundamentals and perception techniques.
2. Provide a broad systems background in the junior year to prepare students for one of three emphasis areas.
3. Provide the three emphasis areas for seniors so that a student may:
   a. Build on his/her design base through the Mechanical Design emphasis by specializing in advanced courses in applied design of machine elements and production such as mechanisms, design, mechanical sub-systems, computers numerical control, robotics, and design for production.
   b. Utilize the lower-level core curriculum to develop competency in areas related to energy transfer such as thermal power, combustion, refrigeration and air conditioning, electrical machinery and controls, and current forms of energy conversion.
   c. Build on the design principles learned in the lower level and knowledge of the systems approach acquired in the junior year to develop competency in factory automation, computer integrated manufacturing, non-traditional manufacturing processes and production planning and control.
4. Develop the students’ capability through (1) and (2) to apply current technology to existing practical technical problems.
5. Provide sufficient depth and rigor in the curriculum to prepare graduates for entry-level industrial positions in applied design, production, testing, operations, and related areas.
6. Provide opportunity for two-year associate-degree level mechanical design, design and drafting, and mechanical engineering technology graduates to pursue baccalaureate-level education in their fields.
7. Provide sufficient general and liberal arts education to permit the graduate to communicate effectively and to function as a responsible citizen.
8. Provide a national role model in the development and implementation of distance learning.

Mechanical Engineering Technology Curriculum*

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Freshman First Semester (15 Credit Hours)</td>
<td>MET 100 Engineering Graphics 3</td>
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<td></td>
<td>ENGN 110 Explore Engineering &amp; Technology I 2</td>
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<td>MATH 162M Precalculus I 3</td>
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<td></td>
<td>CHEM 115N Foundations of Chemistry 4</td>
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<td>ENGL 110C English Composition 3</td>
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<tr>
<td>Freshman Second Semester (15 Credit Hours)</td>
<td>MET 230 Computer-Aided Drafting 3</td>
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<td>ENGN 111 Explore Engineering &amp; Technology II 2</td>
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<td>MATH 163 Precalculus II 3</td>
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<td>PHYS 111N General Physics I 4</td>
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<td>Gen Ed Literature Perspective (L) 3</td>
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<td>Sophomore First Semester (17 Credit Hours)</td>
<td>MET 200 Manufacturing Processes 3</td>
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<td>ENGL 131C Technical &amp; Scientific Writing 3</td>
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<td>CET 200 Statics 3</td>
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<td>MATH 211 Calculus I 4</td>
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<td>PHYS 112N General Physics II 4</td>
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<td>Sophomore Second Semester (15 Credit Hours)</td>
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<td>MET 240 Computer Solid Modeling 3</td>
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<td>COMM 101R Public Speaking 3</td>
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<td></td>
<td>Gen Ed Social Science Perspective (S) 3</td>
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<tr>
<td>Junior First Semester (18 Credit Hours)</td>
<td>MET 300 Thermodynamics 3</td>
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<td>MET 320 Design of Machine Elements 3</td>
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<td>CET 345 Materials Testing Laboratory 1</td>
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<td>EET 305 Adv Technical Analysis 4</td>
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<td>EET 350 Fundamentals of Electrical Technology 3</td>
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<td>EET 355 Electrical Laboratory 1</td>
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Junior Second Semester (17 Credit Hours)

- MET 330 Fluid Mechanics 3
- MET 335 Fluid Mechanics Laboratory 1
- MET 350 Thermal Applications 3
- MET 360 Geometric Dimension & Tolerancing 3
- MET 370 Automation & Controls 3
- MET 386 Automation & Controls Laboratory 1

**Upper-Division Cluster or Minor 3

Senior First Semester (15 Credit Hours)

- MET 387 Power & Energy Laboratory 2
- MET Senior Elective 6
- ENGN 401 FE Review 1

**Upper-Division Cluster or Minor 3

Senior Second Semester (15 Credit Hours)

- MET 435W Senior Design Project 3
- MET Senior Elective 3

**Upper-Division Cluster or Minor 3

- Gen Ed History Perspective (H) 3

Total: 127

*Does not include the University’s General Education foreign language requirement. Additional hours may be required.

**One or more additional courses will be required to complete a minor. See advisor for details.

General Engineering Technology

Gary Crossman, Program Director

The Bachelor of Science in Engineering Technology with a concentration in general engineering technology (GET) is designed primarily to meet the needs of students who have an associate in applied science (A.A.S.) degree in a technical field from a community college. These A.A.S. programs include technical studies, information systems technology, industrial management, quality technology, manufacturing technology, industrial engineering technology and other similar areas. The diverse technical education and career goals of these students often require an interdisciplinary mixture of courses utilizing more than one engineering technology field to meet specific educational and career objectives. The GET program is structured to provide this flexibility. GET graduates are employed in a wide range of career positions including technical and facilities management, technical services, plant engineering, network administration, and quality management.

Through this program, students can finish the last two years of baccalaureate study in general engineering technology on the main campus or through the Old Dominion University TELETECHNET system. To satisfy the upper-division general education requirements, GET students are encouraged to complete a minor in engineering management. Students should contact their local community college for information on articulation agreements and the GET program director for specific course selection guidance.

Many students will find that one of the GET options described below provides course content that integrates well with their career goals: electromechanical systems, technical operations management, computer and network operations, geomatics/geographical information systems, automation and control systems, and construction management. Please consult the department web page for specific courses in these option areas. Other options may be developed in coordination with the general engineering technology advisor.

Electromechanical systems: Complex machinery, automated manufacturing, and building systems often require integration of electrical and mechanical systems. This option is designed to support career goals and interests related to careers that involve this critical system interface area.

Technical operations management: Many career opportunities involve the support of technical operations including manufacturing, maintenance, planning, quality and other related areas. This option is designed to support career interests in this area of study.

Geomatics and GIS: Geomatics and geographical information systems (GIS) are an emerging field involving integration of data from a wide range of sensors (satellites, photographs, etc.) to develop useful geographical information. This option develops skills to enter this emerging field and is of interest in land development, site planning, and environmental careers.

Computer and network operations: Design, operation, and maintenance of computer networks require a person with knowledge of electronic hardware, software, and topology (network planning). In addition, it is often essential to understand the interface with machine controls in an automated manufacturing environment. This option is designed for students with a career interest in filling this complex need in automated and information intensive organizations.

Automation and Control Systems: Automation in manufacturing has evolved considerably in the past two decades. This option provides instruction in those areas supporting the automated control of manufacturing processes.

Construction Management: Courses in this option provide the broad skill set required for long-term advancement and entry-level success. It provides an understanding of scheduling, budgeting, and contemporary construction methods.

General Engineering Technology Program Goals and Objectives

The goals of the general engineering technology program are fully supportive of the urban mission of the University and can be summarized as follows:

1. Develop the student’s capability to apply existing engineering methods and practices for the purposes of product design and improvement, manufacturing and construction, testing, operations, and field support.

2. Provide opportunities for two-year associate-level engineering technicians to pursue baccalaureate level education in their fields of emphasis.

3. Develop and demonstrate a national model for delivering distance education utilizing state-of-the-art electronic media, including virtual laboratories and simulation tools.

4. Provide sufficient general and liberal arts education to permit graduates to communicate effectively and to function as responsible citizens.

5. Provide in-depth competencies in specialty areas according to the following:

   a. Civil: Building structures design, construction operations, surveying and site development.

   b. Electrical: Digital electronics, communications, computer systems, and power.

   c. Mechanical: Mechanical design and manufacturing, thermal technology, and mechanical systems.

Navy College General Engineering Technology Program

There is a specialized general engineering technology program for Navy personnel that offers advanced standing for specific military training. In this program, 24 lower-division technical credits are met by a relevant combination of credits earned through Navy technical schools, with credits awarded as recommended by the ACE Guide, or through other agreements. Some portion of the work must demonstrate basic computer proficiency. Contact the Department of Engineering Technology or the Office of Military Programs at Old Dominion University for additional details.

NAVAL SCIENCE (Naval Reserve Officers’ Training Corps)

John Brown, Department Chair

Mission and Basic Program. The primary mission of the Department of Naval Science is to provide professional and leadership instruction to students who desire to serve as commissioned officers in the United States Navy or Marine Corps. The Naval ROTC program is administratively located under the Director of Military Activities and is situated, for academic matters, within the Frank Batten College of Engineering and Technology.

The NROTC program consists of two courses of instruction: the four-year program and the two-year program. Both apply to scholarship and nonscholarship (college program) students.

The four-year program is divided into a two-year basic course and a two-year advanced course. The basic course (NAVS 101, 201, 202, and accompanying naval laboratory sessions) is normally pursued by NROTC midshipmen during their freshman and sophomore years. While most freshmen begin the basic course during the fall, it is possible to enter the program in the spring semester. The advanced course (NAVS 301, 302, 401, 402, and the accompanying laboratory sessions) is normally pursued during the junior and senior years. Students seeking a commission in the
Marine Corps or Marine Corps Reserve are not required to take NAVS 201, 202, 301, and 302 but instead must take NAVS 310 and 410.

Scholarship recipients supplement classroom instruction with an at-sea training period each summer. College program students supplement classroom instruction with at-sea training during the summer between their junior and senior years. Similarly, Marine Corps option students attend the six-week Marine Officer Candidate School at Quantico, Virginia during the summer between their junior and senior years.

The two-year NROTC program is extended to students who do not participate in NROTC during their freshman and sophomore years. Applications to join must be submitted during the sophomore year. For students entering this program, a six-week summer training period at the Naval Science Institute (NSI) in Newport, Rhode Island following their sophomore year replaces the basic course segment of the four-year program. Students successfully completing summer training enroll in the advanced course for their junior and senior years.

Nuclear Power Option. To be most competitive, those students interested in entering the Navy's nuclear power program should have a college grade point average greater than 3.00. While any major is acceptable, all applicants must have completed at least two semesters of calculus (MATH 211 and MATH 212, or equivalent) and two semesters of calculus-based physics (PHYS 231N and PHYS 232N). Those students with a major in science, math, or engineering are most desirable. While not required, the following courses are recommended regardless of major for those students interested in navy nuclear power: Modern Physics, Differential Equations, Thermodynamics (ME), Principles of Chemistry, and Circuit Analysis.

Minor in Military Leadership. A minor in military leadership is available. For further information, see the section on minors in the Frank Batten College of Engineering and Technology.

For more information contact the Department of Naval Science at (757) 683-4741 or visit the web site: web.odu.edu/nrotc.

MINORS IN THE FRANK BATTEN COLLEGE OF ENGINEERING AND TECHNOLOGY

The upper-division cluster requirement of General Education can be met by selecting a minor.

Minor in Civil Engineering

An undergraduate minor in civil engineering may be obtained by students from outside of the major by successful completion of 12 or more semester credit hours in approved civil engineering course work at the 300 or 400 level. In addition, a student seeking a minor in civil engineering must satisfy all pre- or corequisite requirements for the courses selected.

The course requirements are: CEE 323 or 340, 310, 365 or 4xx, and 4xx where CEE 4xx can be any senior-level elective in coastal, geotechnical, structural or water resources engineering. The precise course of study must be approved by the chief departmental advisor.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in civil engineering with a grade point average of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in civil engineering.

Minor in Civil Engineering Technology – Construction

The minor in civil engineering technology – construction is open to all students (except civil engineering technology majors). The program consists of 12 credits and the specified courses are as follows: CET 310 Fundamentals of Building Construction, CET 445 Construction Planning and Scheduling, CET 460 Construction Estimating, and CET 465 Construction Project Management.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Civil Engineering Technology – Geomatics

The minor in civil engineering technology – geomatics is open to all students (except civil engineering technology majors). Students selecting the minor must satisfy all prerequisite requirements for the courses selected. Two emphasis areas are available: land surveying and photogrammetry. The course requirements are as follows:

Land Surveying: CET 305, 320, 315, and 318 or 416.
Photogrammetry: CET 305, 320, 412, and 421.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Computer Engineering

An undergraduate minor in computer engineering may be obtained by successful completion of 12 or more semester credit hours of approved electrical or computer engineering or computer science course work at the 300 or 400 level. In addition, a student seeking a minor in computer engineering must satisfy all pre- or corequisite requirements for the courses selected. The chief departmental advisor must approve the precise course of study.

The basic course requirements are as follows: ECE 340, CS 333, CS 361 and three hours from ECE 341, 355, 446, or 405.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 for the courses taken in the minor and complete a minimum of six hours of upper division courses in the minor through courses offered by Old Dominion University. Completion of a minor in computer engineering with a GPA of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in computer engineering.

Minor in Electrical Engineering

An undergraduate minor in electrical engineering may be obtained by successful completion of 12 or more semester credit hours of approved electrical engineering course work at the 300 level or above. In addition, a student seeking a minor in electrical engineering must satisfy all pre- or corequisite requirements for the courses selected. Tracks in systems science, physical electronics, digital design, and other options are available. The chief departmental advisor must approve the precise course of study. The basic course requirements for the three main tracks are as follows:

Systems Science Track: ECE 371, 302, 304 and three hours selected from ECE 451, 455, 461, or 481.
Physical Electronics Track: ECE 304, 323, 332, and three hours selected from ECE 472, 473, 474, or 478.
Digital Design Track: ECE 304, 340, 341, and three hours selected from ECE 443 or 446. The digital design track is not available for computer engineering majors.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in electrical engineering with a GPA of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in electrical engineering.

Minor in Electrical Engineering Technology

The minor in electrical engineering technology is open to students (except electrical engineering technology majors) who have completed at least one three-credit course in calculus. It is particularly helpful for those who are preparing for the Fundamentals of Engineering Examination. The courses are offered both on campus and through TELETECHNET.

The program consists of 12 credits. The specified courses are as follows:

EET 350 Fundamentals of Electrical Technology, EET 360 Electrical Power and Machinery, EET 410 Communications Principles, and EET 415 Programmable Machine Controls. Certain substitutions are possible if suitable justification is provided.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor.
Minor in Environmental Engineering

An undergraduate minor in environmental engineering may be obtained by students outside the major by successful completion of 12 or more semester credit hours in approved environmental engineering course work at the 300- or 400-level. In addition, a student seeking a minor in environmental engineering must satisfy all pre- or corequisite requirements for the courses selected.

Two tracks are available: aqueous environmental systems and environmental protection. The course requirements are as follows:

Aqueous Environmental Systems: CEE 350 and nine hours from CEE 446, 447, 450 and 451.

Environmental Protection: CEE 350 and nine hours from CEE 452, 454, 458 and 356.

For completion of a minor a student must have a minimum overall cumulative grade point average of 2.00 in courses taken toward the minor and complete a minimum of six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in environmental engineering with a grade point average of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in environmental engineering.

Minor in Engineering Management

Opportunities for Employment and Graduate Studies

According to a recent Income and Salary Survey by the National Society of Professional Engineers, the median annual income of engineers having executive/administrative job functions is approximately $20,000 higher than those having technical functions. This program provides undergraduate students with a coordinated set of courses that provide some of the basic management concepts useful to those aspiring to an executive/administrative position in technology-based, project-oriented organizations. Upon graduation, this knowledge will help individuals qualify for project management or for entrepreneurial activities. Students interested in obtaining a strong preparation in engineering management should consider the department’s program in Technological Leadership leading to a bachelor’s degree in engineering or technology AND an M.S. in engineering management in five years.

Points of Interest

The minor in engineering management is intended for students with majors in engineering, engineering technology, computer science, physics, chemistry, mathematics, geology, or biology. Students with majors in other disciplines may also pursue this minor, and they are encouraged to talk with their advisors to determine its appropriateness to their educational objectives. The minor develops the skills in team building, interpersonal communications, decision making, project management, leadership, and quality assurance that employers are increasingly looking for in both engineers and scientists, as well as in other employees in “high tech” organizations. The minor also satisfies the University’s General Education upper-division requirement.

Requirements

Applicants for the minor in engineering management must be juniors or seniors with a declared major and a minimum GPA of 2.00. The courses can also be taken by graduate students or other graduates. The minor requires completion of 12 credit hours of course work with a minimum grade point average of 2.00 in the courses taken toward the minor. A minimum of six hours in upper-level courses in the minor requirement must be taken through courses offered by Old Dominion University.

Curriculum

The course work for the minor in engineering management involves extensive writing assignments, oral presentations, and group projects, and is designed to develop the skills needed for rapid advancement in either industrial or government organizations.

Twelve credit hours of course work is required to meet the requirements for the minor in engineering management. Three courses are required: ENMA 301, 302, and 401. Students may choose between ENMA 420 and 421 to complete the requirements for the minor. Students who have taken courses in subjects that overlap significantly with the subjects of these courses may petition to substitute other engineering management courses in their place.

In addition to the undergraduate minor, the Department of Engineering Management and Systems Engineering offers the degrees of Master of Engineering Management (M.E.M.), Master of Science (M.S.) in engineering management, Master of Engineering (M.E.) in systems engineering, Certificate of Professional Study (C.P.S.) in engineering management, and Doctor of Philosophy (Ph.D.). Furthermore, certificate programs in project management, modeling and simulation, and quality management are available, and are designed to count toward the master’s programs. The faculty of engineering management and systems engineering have been involved in various research projects in quality assurance, manufacturing, artificial intelligence, operations research, risk analysis, robust design, human performance, and organizational design and analysis.

For additional information about the undergraduate minor in engineering management, contact:
Chair, Department of Engineering Management and Systems Engineering, Old Dominion University, Norfolk, VA 23529-0248
Telephone: (757) 683-4558, FAX: (757) 683-5640

Minor in Global Engineering

The minor in global engineering is for students who plan to seek career opportunities in companies with global operations. With globalization of design and manufacturing, it has become important for engineers, engaged in transnational projects, to not only have better teamwork and communication skills, but also a good understanding of the socioeconomic, environmental and cultural aspects of global engineering projects. The global engineering minor provides an understanding of these aspects through courses that develop an understanding of global technology, quality assurance standards, and differences in cultural, communication and business practices in a global work environment.

Students may obtain a minor in global engineering by successful completion of 12 semester credit hours in approved course work at the 300- or 400-level. In addition, a student seeking a minor in global engineering must satisfy all pre- or corequisite requirements for the courses selected. Two required courses in the minor are CEE 458 and an engineering cooperative education course, preferably at a multinational company (AE 367, CEE 367, ECE 367, ENMA 367 or ME 367). The remaining two courses must be selected from the following: GEOG 305, ENGL 371, and MKTG 411.

For completion of a minor, a student must have a grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Mechanical Engineering

The Department of Mechanical Engineering offers a minor program with three emphases: thermal sciences, mechanics, and aerospace. The specific minimum course requirements are as follows:

1. Mechanical Engineering Minor: Thermal Sciences-ME 303, 311, 312 (or 414), 315

It may be possible to substitute other appropriate junior- or senior-level mechanical engineering courses for those specified above with prior approval of the department. Exceptions are rare and are not encouraged. All prerequisites and corequisites must be satisfied for all courses taken.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Mechanical Engineering Technology

The minor in mechanical engineering technology is open to students (except mechanical engineering and mechanical engineering technology majors) who have completed at least one three-credit course in calculus. It is particularly helpful for those who are preparing for the Fundamentals of Engineering examination. The courses are offered both on campus and through TELETECHNET.

The program consists of 12 credits and the specified courses are as
follows: MET 300 Thermodynamics, MET 305 Fundamentals of Mechanics, MET 310 Dynamics, and MET 330 Fluid Mechanics. Certain substitutions are possible if suitable justification is provided.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Minor in Military Leadership**

The minor in military leadership is a high quality, interdisciplinary, multidimensional, experiential, and culturally diverse program that exposes students to, and prepares them for, real life leadership opportunities and challenges. Students explore issues of leadership, citizenship, and social change within the context of an inquiry, experiential, and competency-based instructional design. The minor is open to all students who have completed the prerequisite courses. Students who are not enrolled in the military science or naval science program will receive academic credit for commissioning purposes.

The requirements for students in the Naval Science Department are completion of NAVS 302 or 410, NAVS 301, 320 or 310, NAVS 401, NAVS 402, and one course selected from ENMA 301, 401, ENGL 435W, HIST 408, 410, MGMT 325, 340, NURS 480W, PHIL 441, 442, POLS 326, 327, 421, PSYC 343, 345, and SOC 352. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

**Minor in Modeling and Simulation**

An undergraduate minor in modeling and simulation may be obtained by successful completion of 12 or more credit hours of approved engineering and computer science course work at the 300 or 400 level. In addition, a student seeking a minor in modeling and simulation must satisfy all pre- or corequisite requirements for the courses selected.

The basic course requirements are as follows: a 300-level probability and statistics course (e.g., ECE 304, STAT 330), ECE 405, ECE 406, and three hours from CS 361, CS 333, CS 475, or DSCI 476.

For completion of the minor, a student must pass each course toward the minor, achieve a cumulative grade point average of 2.00 for all courses taken toward the minor, complete a minimum of twelve hours of upper-division courses in the minor, and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. To enter the program, students must have completed calculus and one college-level computer-programming course (CS 150 or equivalent). For further information contact the Department of Electrical and Computer Engineering.

**Minor in Motorsports Engineering**

The minor in motorsports engineering is open to all students. Students seeking the minor must satisfy all pre- or corequisite requirements for the courses selected.

The minor is multidisciplinary and consists of four courses in topics that are relevant to the motorsports and automotive industries. Each course is practice-oriented and consists of integrated lectures and laboratories. The basic course requirements are as follows: AE 407, AE 467, ME 407 or AE 457, and MET 480 or AE 477.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Degree requirements are summarized in Table 2 for thesis options and Table 3 for non-thesis options. These represent requirements in accordance with or in addition to University requirements listed in the Requirements for Graduate Degrees section. This information is tabulated for convenience and brevity.

**GRADUATE PROGRAMS**

The college offers graduate degrees at the master's and Ph.D. levels (see the beginning of the College of Engineering and Technology section and the Synopsis of Degree Programs chart in this Catalog).

**Master's-Level Programs**

Special admission requirements which are in addition to University

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**Table 1. Master of Engineering (M.E.), Master of Science (M.S.), and Master of Engineering Management (M.E.M.) Program Admission Requirements (See also the Graduate Admission section of this Catalog)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>GPA in major</th>
<th>GPA overall</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>3.00</td>
<td>3.00</td>
<td>Special requirements for Provisional admission: GPA in major &amp; overall 2.75</td>
</tr>
<tr>
<td>CE</td>
<td>3.00</td>
<td>3.00</td>
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</tr>
<tr>
<td>EnE</td>
<td>3.00</td>
<td>3.00</td>
<td>None specified</td>
</tr>
<tr>
<td>EE</td>
<td>3.00</td>
<td>3.00</td>
<td>None specified</td>
</tr>
<tr>
<td>CpE</td>
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<td>3.00</td>
<td>None specified</td>
</tr>
<tr>
<td>GE</td>
<td>3.00</td>
<td>3.00</td>
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<tr>
<td>ME</td>
<td>3.00</td>
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</tr>
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<td>MEXM</td>
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<td>3.00</td>
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<tr>
<td>EMAE</td>
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<td>2.75</td>
</tr>
<tr>
<td>EMME</td>
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<td>2.75</td>
</tr>
<tr>
<td>ENMA</td>
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<td>MSIM</td>
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</tr>
<tr>
<td>SYE</td>
<td>3.00</td>
<td>3.00</td>
<td>None specified</td>
</tr>
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</table>

**Ph.D. Programs**

For regular admission, a master's degree or its equivalent with a grade point average of 3.50 in the appropriate field from an accredited institution of higher education is required. Special admission requirements that apply in addition to University requirements (see the Graduate Admission and Requirements for Doctoral Degrees sections of this Catalog) are listed in Table 4. International students should pay careful attention to the University admission requirements in the Admission section. All applicants must submit Graduate Record Examination aptitude scores. The GRE requirement is waived for the Ph.D. programs in civil engineering and environmental engineering if the applicant holds an ABET-accredited engineering degree. The Master of Engineering Management program requires a bachelor's degree in engineering, engineering technology or applied science and two years of post-bachelor's work experience. The master's program in modeling and simulation and the program in material science and engineering require an undergraduate degree in the sciences, engineering, or information systems. Grade point averages are computed with a basis of 4.00. Each application must contain an essay of not more than 500 words describing personal and academic goals, professional objectives, preparation for graduate study, and how the chosen program will help the applicant achieve goals and objectives. Exceptions to these requirements require consultation with the appropriate graduate program director.
### Table 2. Master of Engineering and Master of Engineering Management Requirements

<table>
<thead>
<tr>
<th>Minimum Requirements</th>
<th>AE</th>
<th>CE</th>
<th>EnVE</th>
<th>EE</th>
<th>CpE</th>
<th>ME</th>
<th>MSE</th>
<th>AE/EMME</th>
<th>MEXM</th>
<th>MSIM</th>
<th>SYE</th>
<th>GE</th>
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<tbody>
<tr>
<td>Semester Credits of Course Work</td>
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<td>27</td>
<td>27</td>
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<td>Semester Credits of Research</td>
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<td>Total Credits</td>
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<td>30</td>
<td>30</td>
<td>30</td>
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<td>Course Work Semester Credits of Graduate Math/State</td>
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<td>3</td>
<td>3</td>
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<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Course Work Semester Credits in Major</td>
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<td>15</td>
<td>18</td>
<td>15</td>
<td>18</td>
<td>18</td>
<td>18</td>
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<td>21</td>
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<td>12</td>
<td>21</td>
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<td>Course Work Semester Credits at 600 level or above</td>
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<td>18</td>
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<td>244</td>
<td>31</td>
<td>24</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>Writing Exam</td>
<td>Required</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
<td>Required</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
<td>Required</td>
<td>At option of advisor</td>
<td>Required</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
</tr>
<tr>
<td>Comprehensive Exam</td>
<td>Written</td>
<td>Oral Exam</td>
<td>Oral Exam</td>
<td>Written</td>
<td>Written</td>
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<td>Written</td>
<td>Written</td>
<td>Written</td>
<td>Project Exam</td>
<td>Project Exam</td>
<td>Project Exam</td>
</tr>
</tbody>
</table>

Degree requirements are summarized in Table 2 for non-thesis options and Table 3 for thesis options. These requirements are in accordance with or in addition to University requirements listed in the Requirements for Graduate Degrees section. This information is tabulated for convenience and briefly.

### Table 3. Master of Science Degree Requirements

<table>
<thead>
<tr>
<th>Minimum Requirements</th>
<th>AE</th>
<th>CE</th>
<th>EnVE</th>
<th>EE</th>
<th>CpE</th>
<th>ME</th>
<th>MSE</th>
<th>AM AE/EMME</th>
<th>ENMA</th>
<th>MSIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester Credits of Course Work</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Semester Credits of Research</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Course Work Semester Credits of Graduate Math/State</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Course Work Semester Credits in Major</td>
<td>18</td>
<td>12</td>
<td>12</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>14</td>
<td>15/18</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Course Work Semester Credits at 600 level or above</td>
<td>18</td>
<td>15</td>
<td>15</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>24</td>
<td>15</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Writing Exam</td>
<td>Required</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>At option of advisor</td>
<td>Required</td>
<td>At option of advisor</td>
<td>At option of advisor</td>
</tr>
</tbody>
</table>

### Table 4. Ph.D. Program Admission Requirements (See also the Doctoral Requirements section)

<table>
<thead>
<tr>
<th>MINIMUM REQUIREMENTS</th>
<th>GPA (previous graduate work) for provisional admission</th>
<th>Letters of Recommendation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>CE</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>EnVE</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>EE</td>
<td>Not specified</td>
<td>2</td>
</tr>
<tr>
<td>ME</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>EMAE</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>EMME</td>
<td>3.25</td>
<td>2</td>
</tr>
<tr>
<td>ENMA</td>
<td>Not specified</td>
<td>2</td>
</tr>
<tr>
<td>MSIM</td>
<td>3.25</td>
<td>3</td>
</tr>
</tbody>
</table>

* Letters of recommendation should be from former or current professor except in engineering management where letters from employment supervisors are acceptable. In civil engineering and environmental engineering, one of the two letters may be from an employment supervisor.
words describing personal and academic goals, professional objectives, preparation for graduate study, and how the chosen program will help the applicant achieve goals and objectives. It is advisable for those wishing to enter a Ph.D. program to arrange a personal interview with the graduate program director. Requests for exceptions to the specified admission requirements require such an interview.

University requirements for the Ph.D. degree are described in the Requirements for Graduate Degrees section and should be read carefully. Requirements may vary significantly between individuals depending on their needs and objectives. The final determination that degree requirements have been met is made by the program director and the dean. These officials rely on recommendations of the students' guidance and dissertation committees. Table 5 lists requirements that are imposed by the College of Engineering and Technology.

### AEROSPACE ENGINEERING

Ernest J. Cross, Chair

Graduate programs in the Department of Aerospace Engineering are designed to provide the following: an environment of scientific inquiry and intellectual stimulation for students; the opportunity for advanced education and creative research, essential for students wishing to pursue careers in teaching or research; the means for students to contribute to the body of knowledge in engineering; and the opportunity to make contributions to the advancement of the Commonwealth of Virginia and the United States as a whole. These programs prepare graduates for professional practice in teaching, research and development, design, and consulting. Graduates are prepared for challenging and rewarding employment in high-technology industries, research organizations, consulting firms, and government agencies. These programs are also designed to serve both full-time and part-time graduate students. The department is closely associated with regional industries, consulting firms, government agencies, and research laboratories, and principally with the NASA Langley Research Center. This association adds a unique and special degree of relevance to the curricula and creates a stimulating environment for the pursuit of graduate studies by traditional full-time students. Many graduate engineering courses are offered at times and locations convenient to non-traditional part-time students with full-time employment. The department offers many courses at the Old Dominion University Peninsula Higher Education Center, particularly convenient for personnel from NASA Langley Research Center, Thomas Jefferson National Accelerator Facility, Newport News Shipbuilding, and other local industrial and governmental organizations. This center serves as the prime receiving site for the televised graduate courses taught on the main campus.

The department emphasizes excellence in graduate instruction and research in aerospace engineering, engineering mechanics, and experimental methods, and also administers the aerospace option for senior undergraduates in the Mechanical Engineering Department. In addition, the department provides technical leadership for the Langley Full Scale Wind Tunnel, the Center for Advanced Engineering Environments, and the Center for Experimental Aeronautics as part of its educational and research activities. These centers are all located at NASA Langley. Close ties are also maintained with the Virginia Space Flight Center located at NASA Wallops Island Launch Complex. Most graduate students have the opportunity to work in support of NASA-sponsored research programs. Additional sponsoring and supporting agencies and organizations include the Air Force Office of Scientific Research, the Office of Naval Research, the Army Research Office, the Defense Advanced Research Projects Agency, the National Science Foundation, and several aerospace and high technology companies. Approximately $1 million is generated annually in sponsored research programs. Aerospace engineering faculty are currently engaged in teaching and research in the following areas: computational fluid dynamics; high angle of attack and vortex aerodynamics; sonic boom prediction and alleviation; fluid-structure interaction; flow stability and control; turbulence modeling; unsteady aerodynamics; aeroacoustics; experimental aerodynamics; aerodynamic design optimization; ground vehicle aerodynamics; computational structural mechanics; finite element development; nonlinear vibration; active vibration control; smart materials and structures; composite structures; structural acoustics and sonic fatigue; rotor blade analysis and control; multibody dynamics; theoretical and computational control; atmospheric flight dynamics and control; space flight dynamics and control; robotics; magnetic suspension; real-time control, and a variety of multidisciplinary areas. The department faculty includes five emeritus scholars out of approximately 25 for the University.

Three distinct degree tracks are offered by the department. First, the aerospace engineering degree track gives students the opportunity for deep, focused study in one particular emphasis area within the broad scope of aerospace engineering. The emphasis areas currently available within the department are fluid mechanics, structural mechanics, and dynamics and controls. Second, the engineering mechanics degree track provides students with a broader, interdisciplinary program, with a strong foundation in each of the three emphasis areas. Third, the experimental methods degree track permits students to specialize in this important skill area, using a unique range of laboratory facilities available to the department. Within these broad outlines, a graduate student may pursue specializations in technical areas with a theoretical, computational, or experimental emphasis. The student also has the opportunity to select course work in other areas, such as mathematics, physics, or computer science, for example. Three types of degrees are available within the aerospace engineering and engineering mechanics programs. These degree types are the Master of Science and Master of Engineering degrees, the former requiring a thesis and the latter requiring two additional courses, and the Doctor of Philosophy degree which is based on a dissertation. The experimental methods degree is only offered at the Master of Engineering level and involves a capstone project course. All degree programs offered by the department can be utilized as components within the accelerated Baccalaureate-Master's and Baccalaureate-Doctoral degree programs offered by the College of Engineering and Technology.

For additional information about the educational and research opportunities available in the Department of Aerospace Engineering, please direct inquiries to:

Graduate Program Director
241 Kaufman Hall
Department of Aerospace Engineering
Old Dominion University
Norfolk, VA 23529-0247

Voice: (757) 683-3720
Fax: (757) 683-3200
Email: aeroinfo@aero.odu.edu
Web: http://www.aero.odu.edu
http://www.ifst.com
http://oduae-www.larc.nasa.gov
http://va-spaceflightcenter.org

#### Master’s Programs

Osama A. Kandil, Graduate Program Director
Colin P. Britcher, Experimental Methods Program Director

To qualify as a candidate for a Master of Science or Master of Engineering degree in aerospace engineering, engineering mechanics, or experimental methods, a student should meet the following requirements. The applicant should have completed undergraduate-level course work that includes subject matter approximately equivalent to a bachelor's program in aerospace engineering...

Table 5. Ph.D. Degree Requirements

<table>
<thead>
<tr>
<th>Research Skills</th>
<th>Writing Exam</th>
<th>Course</th>
<th>Course Work Semester Credit Hours</th>
<th>Dissertation Hours</th>
<th>Foreign Language Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>Demonstrated prior to candidacy</td>
<td>Yes (before completion of 12 credit hrs.)</td>
<td>24</td>
<td>24</td>
<td>May apply as research skill</td>
</tr>
<tr>
<td>CE</td>
<td>Conforms to University policy</td>
<td>At option of advisor</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>EnvE</td>
<td>Conforms to University policy</td>
<td>At option of advisor</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>EE</td>
<td>Must include computer skill</td>
<td>Yes (before completion of 12 credit hrs.)</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>ME</td>
<td>Demonstrated prior to candidacy</td>
<td>Yes (before completion of 12 credit hrs.)</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>EMAE</td>
<td>Demonstrated prior to candidacy</td>
<td>Yes (before completion of 12 credit hrs.)</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>EMME</td>
<td>Demonstrated prior to candidacy</td>
<td>Yes (before completion of 12 credit hrs.)</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>ENMA</td>
<td>ENMA 888</td>
<td>At option of advisor</td>
<td>26</td>
<td>24</td>
<td>None</td>
</tr>
<tr>
<td>MSIM</td>
<td>MSIM 888</td>
<td>At option of advisor</td>
<td>24</td>
<td>24</td>
<td>None</td>
</tr>
</tbody>
</table>
Master of Engineering (Non-Thesis): The Master of Engineering degree in aerospace engineering and in engineering mechanics is a non-research degree. The 30 semester credit hour requirement is thus met entirely by course work. During their final semester, Master of Engineering students are required to pass a written examination covering their complete program of course work, and may expand questioning to include thesis research. The Master’s Examination Committee consists of the student’s Thesis Advisory Committee. Students are required to pass the master’s comprehensive examination in order to earn the degree. The master’s comprehensive examination is administered by the faculty advisor with support from the Master’s Examination Committee. The general format used to administer this written, open-book, closed-notes, single-day examination is four problems concentrating on the core curricula given in a four-hour morning session and four problems concentrating on the emphasis areas given in a four-hour afternoon session. Students are only permitted two attempts at this master’s comprehensive examination.

Master of Engineering (Project): The Master of Engineering degree in experimental methods is an applied research degree which requires an experimental project containing both written and verbal components. The experimental project constitutes three semester credit hours within the 30 semester credit hour requirement. Experimental projects should be planned such that the majority of the work can be completed in one semester. The experimental project will culminate in a written project report in the format of a technical journal or conference paper, and a verbal project presentation covering the findings of the investigation. The Project Advisory Committee is formed by the student early in the degree program. The project presentation is administered by the faculty advisor with support from the Project Advisory Committee. The verbal examination consists of two parts. In the first part, the student presents his/her project research in a seminar format (30-45 minutes) to an audience consisting of the student’s Project Advisory Committee, faculty, students, and other interested people. After the verbal presentation, the student is further examined by the Project Advisory Committee. The committee concentrates on the research presented in both verbal and written formats, but may expand questioning to include related course work. Students are only permitted two attempts at this project presentation.

Doctoral Program
Osama A. Kandil, Graduate Program Director

To qualify as a candidate for a Doctor of Philosophy degree in aerospace engineering or engineering mechanics, a student should meet the following requirements. The applicant should have completed graduate-level course work that includes subject matter approximately equivalent to the master’s programs in aerospace engineering or engineering mechanics. A minimum of 24 semester credit hours beyond the master’s degree is required. All students will plan and execute their programs under the guidance of a faculty advisor.

Course Work. A minimum of 24 semester credit hours of course work beyond the master’s degree and a minimum of 24 semester credit hours of dissertation research should be included in the doctoral degree program. At least three-fifths of the course work must be at the 800-level courses. The student should maintain at least a B (3.00) average in the course work. During the first semester, the student is assigned a Guidance Committee, chaired by the faculty advisor with at least two additional full-time members. The selection of course work is primarily the decision of the faculty advisor, Guidance Committee, and student. Courses designated as part of the master’s core curricula will not normally be available for inclusion in the 24 credit hour course work requirement, and 500-level courses are also not allowed. Aerospace engineering students will be expected to complete at least nine credit hours of graduate work in at least two areas such as fluid mechanics, structural mechanics, and dynamics and controls, coupled with hands-on experience with state-of-the-art test equipment. The entire program will be planned by the student under the guidance of a faculty advisor.

Master of Science (Thesis): The Master of Science degree in aerospace engineering or engineering mechanics is a research degree which requires a written thesis. The thesis constitutes six semester credit hours within the 30 semester credit hour requirement. As early as possible, a Thesis Advisory Committee should be formed. Students seeking a Master of Science degree are given a verbal examination, administered as the student’s thesis defense. The thesis defense is administered by the faculty advisor with support from the Thesis Advisory Committee. The verbal examination consists of two parts. In the first part, the student presents his/her thesis research in a seminar format (30-45 minutes) to an audience consisting of the student’s Thesis Advisory Committee, faculty, students, and other interested people. After the oral presentation of the thesis research, the student answers questions related to the thesis from the audience. After a short break, the second part of the examination is conducted in a closed session where the student is further examined by the Thesis Advisory Committee. The committee concentrates on the research presented in both verbal and written formats, but may expand questioning to include related course work. Students are only permitted two attempts at this thesis defense.

Aerospace Engineering: Master of Science in aerospace engineering and Master of Engineering in aerospace engineering students are required to choose an emphasis area, either fluid mechanics, structural mechanics, or dynamics and controls and take the designated core course for that emphasis area: AE 602 (Fundamentals of Fluid Mechanics and Aerodynamics), AE 603 (Energy and Variational Methods in Structural Mechanics), or AE 604 (Analytical Dynamics of Aerospace Vehicles). This class will complete the core course requirements. The remainder of the program will be selected primarily, but not necessarily exclusively, from the chosen emphasis area, according to the study plan developed by the student and faculty advisor.

Engineering Mechanics: Master of Science in engineering mechanics and Master of Engineering in engineering mechanics students are required to take a minimum of one course in each of the three emphasis areas of fluid mechanics, structural mechanics, and dynamics and controls. One of these courses must be from the emphasis core courses: AE 602 (Fundamentals of Fluid Mechanics and Aerodynamics), AE 603 (Energy and Variational Methods in Structural Mechanics), and AE 604 (Analytical Dynamics of Aerospace Vehicles). Many students choose to take all three emphasis core courses. Either by choice of these courses or by an additional selection, students should complete one course with heavy emphasis on computational methods. These selections will complete the core course requirements. The remainder of the program will be planned by the student under the guidance of the faculty advisor.

Experimental Methods: Master of Engineering in experimental methods students have a different set of requirements. Students entering this program are required to take AE 605 (Applied Engineering Analysis), AE 606 (Applied Signal Processing) and AE 691 (Experimental Research Project). Students should then take the required three courses in each of two speciality areas, chosen from the three currently offered: fluid mechanics, structural mechanics and dynamics and controls. The experimental methods program requires students to combine two of these speciality areas as part of the degree requirements. An approved elective course completes the 30 credit hour program. Combines lead to emphasis in areas such as: noise control, robotic flight controls, active vibration control, fluid-structure interaction, wind tunnel testing, aircraft-spacecraft design, and aeroelasticity. In this program, students will gain a solid foundation in advanced topics in the areas of fluid mechanics, structural mechanics, and dynamics and controls, coupled with hands-on experience with state-of-the-art test and measurement equipment. The entire program will be planned by the student under the guidance of a faculty advisor.

Master of Science (Thesis): The Master of Science degree in aerospace engineering or engineering mechanics is a research degree which requires a written thesis. The thesis constitutes six semester credit hours within the 30 semester credit hour requirement. As early as possible, a Thesis Advisory Committee should be formed. Students seeking a Master of Science degree are given a verbal examination, administered as the student’s thesis defense. The thesis defense is administered by the faculty advisor with support from the Thesis Advisory Committee. The verbal examination consists of two parts. In the first part, the student presents his/her thesis research in a seminar format (30-45 minutes) to an audience consisting of the student’s Thesis Advisory Committee, faculty, students, and other interested people. After the oral presentation of the thesis research, the student answers questions related to the thesis from the audience. After a short break, the second part of the examination is conducted in a closed session where the student is further examined by the Thesis Advisory Committee. The committee concentrates on the research presented in both verbal and written formats, but may expand questioning to include related course work. Students are only permitted two attempts at this thesis defense.
advisor with support from the Guidance Committee. The written format is an open-book, closed-notes, single-day examination with three problems concentrating on the core curricula given in a three-hour morning session and three problems concentrating on the emphasis areas given in a three-hour afternoon session. The verbal format is a closed-book, closed-notes, single-day examination of duration not less than one hour. Students should reach a satisfactory level of performance within two attempts, or they are not allowed to continue in the program. Qualifying Candidacy Examination. Students seeking a Doctor of Philosophy degree are given a part-written and part-verbal examination, administered as the student’s qualifying candidacy examination. The written and verbal portions of the qualifying candidacy examination are administered and scheduled by the faculty advisor with support from the Guidance Committee. Problems and questions are directed towards the student’s research emphasis and supporting theoretical principles, and may be on any topic of fundamental nature requiring significant knowledge of the subject. The student should demonstrate a level of understanding that projects confidence in a successful completion of the doctoral research requirements. The written format is an open-book, open-notes, single-day examination covering several problems during four-hour morning and four-hour afternoon sessions. The verbal format is a closed-book, closed-notes, single-day examination of duration not less than two hours. One re-examination is allowed, but a student should ultimately reach a satisfactory level of performance in this examination.

The Doctor of Philosophy degree in aerospace engineering and in engineering mechanics is an advanced research degree which requires a written dissertation in the form of a unique contribution of a fundamental nature. The dissertation constitutes 24 semester credit hours within the 48 semester credit hour requirement. After successfully passing the qualifying candidacy examination, a Dissertation Committee is formed, which administers all remaining degree requirements. Doctoral students are required to pass a pass a verbal presentation of their dissertation proposal, as well as a verbal defense of their dissertation at the conclusion of study. The format of the dissertation proposal typically consists of a closed one-hour presentation by the student on the proposed research topic followed by questioning.

Dissertation Defense. The dissertation defense consists of two parts. In the first part, the student presents his/her dissertation research in a seminar format (30-45 minutes) to an audience consisting of the student’s Dissertation Committee, faculty, students, and other interested people. After the verbal presentation of the dissertation research, the student answers questions related to the dissertation from the audience. After a short break, the second part of the examination is conducted in a closed session where the student is further examined by the Dissertation Committee. The committee concentrates on the research presented in both verbal and written formats, but may expand questioning to include related course work and the entire program of study. The main purpose of the dissertation defense is to examine the candidate for original research contributions reflected in the dissertation. Students are only permitted two attempts in demonstrating their capability during the dissertation proposal and dissertation defense.

CIVIL AND ENVIRONMENTAL ENGINEERING

Master’s Degree—Civil Engineering

Isao Ishibashi, Graduate Program Director

Areas of specialization are coastal, geotechnical, hydraulic, and structural and water resources engineering. The applicant’s bachelor’s degree should be in civil engineering; however, other engineering majors and science majors with a strong background in mathematics and physical sciences may also enroll. Students lacking adequate preparation may be admitted provisionally and will be required to complete undergraduate course work in addition to the graduate program requirements.

Doctor of Philosophy—Civil Engineering

Isao Ishibashi, Graduate Program Director

A master’s degree or equivalent in engineering or in a related area is required for admission into the doctoral program in civil engineering; however, exceptionally well qualified students can be admitted to the doctoral program directly without a master’s degree.

Doctor of Philosophy—Environmental Engineering

Gary C. Schafran, Environmental Engineering Program Director

Research and curriculum areas are the same as noted under the master’s degree program and a master’s degree or equivalent preparation is required to be admitted to the program. However, exceptionally well qualified students can be admitted to the doctoral program directly without a master’s degree.

ELECTRICAL AND COMPUTER ENGINEERING

Sacharia Albin, Graduate Program Director

Electrical and computer engineering graduate studies encompass three broad areas: system science, physical electronics, and computer engineering. The department offers both master’s and doctoral degrees in electrical engineering. In computer engineering, a master’s degree program jointly administered by the Departments of Electrical and Computer Engineering and Computer Science is available. The department maintains several state-of-the-art research laboratories, including the Physical Electronics Research Institute, the Microelectronics Fabrication Laboratory, and the Speech Communication Laboratory. In addition, the department maintains several laboratories, at off-campus sites, in the Applied Research Center at the Jeffersonian National Laboratory and at the Virginia Modeling Analysis and Simulation Center. These research facilities, taken together, put the department in a position of national leadership in several research areas and a leading institution of research and higher education in the southeastern United States.

Master’s Degree—Electrical Engineering

Both M.S. (eight graduate courses plus a thesis) and M.E. (10 graduate courses) degree options are available to full-time and part-time students seeking to improve their professional skills in electrical engineering. Students are required to complete four foundation courses from those offered by the department. Remaining courses can be selected to meet the objectives of each student. Applicants are normally expected to have a B.S. degree in electrical or computer engineering, although applicants from other engineering and technical backgrounds are also welcome. Accepted applicants from other disciplines may be required to take some additional undergraduate course work to meet prerequisites for graduate work.

Master’s Degree—Computer Engineering

This program has two degree options—M.S. with eight courses plus a thesis, and M.E. with 10 graduate courses. The program incorporates both hardware and software aspects of modern computing systems. Specialized course work is available in modeling and simulation, networking, machine pattern recognition, and a small number of other areas. Accepted students with undergraduate degrees in technical fields other than computer engineering may be required to take some additional undergraduate course work to meet prerequisites for graduate courses.

Doctor of Philosophy

The department grants the doctoral degree in electrical and computer engineering. Applicants are normally expected to have completed a master’s degree in either electrical engineering and/or computer engineering or a closely related technical field. Requirements beyond the master’s degree include eight courses, a dissertation, and successful completion of the diagnostic and candidacy exams. Additional course work may be required to meet prerequisites for courses and/or appropriate research background. Research specialties are the same as those for the master’s programs mentioned above.

The doctoral program is highly selective. Students and faculty make major contributions in their fields of study, as evidenced by publications generated annually, by recognition granted to faculty and students through awards received, as well as by externally funded research grants obtained by the faculty.
Accelerated Master’s and Doctoral Programs

For a select number of qualified students the department offers a joint Bachelor’s/M.S. degree that enables students to finish their master’s degree within five years of admission to the University. In this program students are able to initiate their research in the junior or senior years, and are given the opportunity to obtain dual (graduate and undergradu- ate) credit for two senior-level electives. For details refer to the section on Bachelor’s/Master’s Programs.

For those students who show an aptitude and desire to pursue cutting-edge research, there is the possibility of direct entrance to the doctoral program upon completion of the baccalaureate. In this highly selective pro- gram, the exceptional students are given the opportunity as undergraduates to declare their desire to pursue the doctorate or Bachelor’s/Ph.D. program. For details, refer to the section on Bachelor's/Ph.D. programs.

ENGINEERING MANAGEMENT AND SYSTEMS ENGINEERING

Resit Unal, Chair

The Department of Engineering Management and Systems Engineering at Old Dominion University is the recipient of American Society of Engineering Management’s 1995, 2000 and 2002 awards for Excellence in Leadership in Graduate Programs. The Master of Engineering Management program at Old Dominion University is also one of the first three in the nation that has been certified by the American Society for Engineering Management.

The Department of Engineering Management and Systems Engineering provides its graduates with the necessary skills, knowledge, abilities, and at- titudes required to design and manage the technology-based, project-driven enterprise. Fundamentally, the engineering management discipline addresses the problems, the design, and the management of projects and complex opera- tions. The programs are grounded in the solid principles of systems science and systems engineering while exploiting the tools of management science and project management. The Old Dominion Department of Engineering Management and Systems Engineering school of thought emphasizes the concept of technological leadership. Technological leadership focuses on the development of a professional perspective that anticipates opportunities for competitive advantages that technology can provide to an enterprise. Core course work in the engineering management programs concentrates on developing the knowledge and skills required by graduates to provide the project and program leadership and management necessary for their organization to develop and apply technologies. Technological leadership’s vision looks to the creation of new products, processes, and services which, in turn, will create new markets or enable domination of existing ones. Through design projects and exercises, students are led through alternative ways of thinking and communicating about complex systems and technology. The engineering management and systems engineering programs at Old Dominion University provide students the opportunities in the classroom and through involvement with industrial partners to gain the confidence and experience to effectively create, integrate, and apply technology in enterprise operations.

Web site. Up-to-date announcements, program changes, course avail- ability, faculty contacts, and scheduling information can be found at the Department of Engineering Management and Systems Engineering’s web site: http://web.odu.edu/engr/enm.

Master’s Programs

Robert Safford, Graduate Program Director

Master of Engineering Management/Master of Science in Engineering Management

The Master of Engineering Management (M.E.M.) program addresses the needs of working professionals in engineering and applied sciences who have moved or who will soon move into positions of managerial re- sponsibility. The Master of Science (M.S.) program requires thesis research. The M.E.M and M.S. programs are oriented toward the design and man- agement of technical projects, complex operations, and technology-based organizations. Courses are scheduled in the evenings and at off-campus sites, including the Peninsula Higher Education Center in Hampton and the Virginia Beach Higher Education Center. A complete M.E.M. program is available through Old Dominion University’s TELETECHNET distance learning program and through the Commonwealth Graduate Engineering Program. Both systems transmit live courses via an interactive closed-circuit television network, from classrooms at Old Dominion University to educational, industrial and government locations throughout Virginia.

Admission

Admission to graduate programs in engineering management is in ac- cordance with the general requirements for graduate degrees as speci- fied in the Admission section of this Catalog, grad-catalog.htm. Specific requirements for the Department of Engineering Management and Systems Engineering include the following:

For regular admission, applicants must have an undergraduate degree in engineering or engineering technology or from an accredited program in applied science with a GPA of 3.00 or better. Students with an undergradu- ate GPA between 2.80 and 3.00 may be admitted provisionally based on their academic preparation and GRE scores. A minimum TOEFL score of 550 is required for all international students when English is not their first language. All admitted students are required to submit a Plan of Study during their first semester.

Curriculum

The master’s degree programs in the Department of Engineering Management and Systems Engineering are in accordance with the general requirements for master’s degrees as specified in the Requirements for Graduate Degrees section of this Catalog. Specific requirements for the Master in Engineering Management and Master of Science in engineering management include the following.

The Engineering Management and Systems Engineering Department requires 31 credit hours of course work (10 three-credit courses plus a one-credit capstone course) for the M.E.M. The M.S. degree requires 27 credit hours of course work and six credit hours of thesis research for a total of 33 credit hours.

Prerequisite Courses. All students must have mathematics course work through the level of integral calculus (MATH 212 or equivalent); matrix algebra (MATH 316 or equivalent) or differential equations (MATH 304 or equivalent); and a course in statistics (ENMA 420/520 or STAT 619 or equivalent).

Core Courses. Required core courses for the M.E.M. are ENMA 600, 601, 603, 604, 613, 613, 614, and 640. Required courses for the M.S. are ENMA 600, 601, 603, 604, 613, 614, 640, and 721.

Elective Courses. Students must select nine credit hours of elective coursework for the M.E.M. and three credit hours of elective course work for the M.S. degree. The electives may be selected from the ENMA courses and/or from approved courses in other departments in the Batten Col- lege of Engineering and Technology or other colleges (College of Sciences, College of Business and Public Administration) with the approval of the graduate program director. All electives must be at the graduate level. Elective courses include: ENMA 602, 606, 610, 701, 703, 704, 714, 715, 723, 724, 728, 743, 750, 763, and IT 620.

Capstone. ENMA 650; required for M.E.M. (to be taken in final sem- ester). Thesis Research. M.S. students take six credits of thesis research, which must be spread over two semesters.

Exceptions to these requirements must be approved by the graduate program director.

Master of Engineering—Systems Engineering

The focus of this degree program is to provide students with in-depth, real-world practitioner expertise in engineering and integrating complex system of systems for government and commercial clients. Students in the program are introduced to the core competencies for system of system architectures, integration and engineering, the processes, the new tech- nologies, and the engineering disciplines needed for successful delivery of executable systems.

Admission

Admission to the graduate program in systems engineering is in ac- cordance with the general requirements for graduate degrees as specified in this Catalog. Specific requirements for the Department of Engineering Management and Systems Engineering include the following: bachelor’s degree in science, engineering, mathematics, computer science or other related field. Applicants with a bachelor’s degree in a non-technical disci- pline with college level calculus and five years experience are eligible for admission to the program. An undergraduate grade point average of
3.00 (out of 4.00) in both the major and overall is required. Students with a GPA between 2.80 and 3.00 may be admitted provisionally based upon their work record, academic preparation and GRE scores. Students with a GPA below 2.75 must complete enough additional academic course work so their overall GPA is raised to the appropriate level for admission. Students with a GPA below 3.00 must submit their Graduate Record Examination (GRE) scores as part of their application. A minimum TOEFL score of 550 is required for all international students when English is not their first language.

Curriculum

The Master of Engineering degree program in systems engineering is in accordance with the general requirements for master’s degrees as specified in this Catalog. Specific requirements for the Master in Engineering with a concentration in systems engineering include the following:

The Engineering Management and Systems Engineering Department requires 31 graduate credit hours of course work (10 courses plus a one-credit capstone course) for the M.E. in systems engineering program.

Prerequisite/Corequisite Courses. All students must have mathematics course work through the level of integral calculus (MATH 212 or equivalent), matrix algebra (MATH 316 or equivalent) or differential equations (MATH 304 or equivalent), and ENMA 520 or equivalent calculus based probability and statistics. Students who have not had a calculus based probability and statistics course will be required to include ENMA 520 or equivalent as part of their plan of study.

Electives. Students must choose nine hours from the following courses: ENMA 603, 607, 610, 613, 614, 700, 701, 703, 704, 714, 717, 723, 724, 728, 743, ECE 505, and ECE 605. Electives not listed must be approved by the graduate program director for inclusion into the student’s program of study.

Doctor of Philosophy—Engineering Management

Andres Sousa-Poza, Graduate Program Director

The Doctor of Philosophy (Ph.D.) focuses on developing the necessary skills to perform and evaluate rigorous research in areas related to the design and management of projects, programs, and complex human-technological systems. The goal of the Ph.D. program is to prepare graduates for careers in teaching and research at academic institutions as well as in other public and private organizations characterized by innovation and technological leadership.

Admission

Admission to graduate programs in engineering management and systems engineering is in accordance with the general requirements for graduate degrees as specified in the Graduate Admission section of this Catalog. Specific requirements for the Department of Engineering Management and Systems Engineering include the following:

Applicants for the Ph.D. must have a bachelor’s or master’s degree from an accredited institution in engineering, engineering technology, applied science or applied mathematics, and at least 24 semester hours of graduate study approved by the graduate program director. An undergraduate GPA of at least 3.00 and a graduate GPA of at least 3.50 (on a 4.00 basis) are required for regular admission. GRE general aptitude scores are required. Students lacking adequate academic preparation may be admitted provisionally and may be required to complete coursework in addition to the graduate admission requirements. A minimum TOEFL score of 550 is required for all international students when English is not their first language. All admitted students must submit a Plan of Study. While it is possible to do course work on a part-time basis, at least one year of full-time residency is expected of all Ph.D. students while conducting doctoral dissertation research.

Curriculum

Curriculum requirements in engineering management are in accordance with the general requirements for Ph.D. degrees as specified in the Requirements for Graduate Degrees section of this Catalog. Specific requirements for the Ph.D. in engineering management include the following:

The Ph.D. degree requires a minimum of 53 semester credit hours beyond an approved master's degree, with a minimum of 27 hours of post-master's graduate course work, two semester credit hours of Ph.D. seminar, and a minimum of 24 dissertation hours.

Requirements to consider in preparing for the Ph.D. program in engineering management include:

- Satisfactory completion of 53 credit hours of postmaster's degree or equivalent level of performance course work. This includes 24 credit hours of dissertation credit, two credit hours of Ph.D. seminar and a minimum of 27 credit hours of course work.
- The passing of a written and oral candidacy examination at the end of the program of study course work.
- The successful defense of a written dissertation proposal before the completion of nine hours of dissertation research.
- The completion of a dissertation representing independent, original research worthy of publication in a refereed scholarly journal.
- The successful public defense of the dissertation before an audience which includes an appropriately selected committee of faculty knowledgeable in the field of the project.

Prerequisite Courses. All students must have mathematics course work work through the level of integral calculus (MATH 212 or equivalent); matrix algebra (MATH 316 or equivalent) or differential equations (MATH 304 or equivalent); and a course in statistics (ENMA 420/520 or STAT 619 or equivalent).

Master’s-Level Courses. As of their 27 credit hours of master’s-level course work, all students must have completed the following engineering management leveling courses or their equivalent: ENMA 600, 603, and 604. Students may be admitted to the Ph.D. program deficient in these leveling courses, but as part of their plan of study, the student must take and successfully complete these courses at the earliest possible opportunity.

Core Courses (12 credit hours). All students must take ENMA 815, 817, 821, and 824 at Old Dominion University.

Ph.D. Seminar (2 credit hours). Two consecutive semesters of ENMA 888 Ph.D. Seminar are required.

Specialization Area (9 credit hours). Students must choose between one of the three following concentration areas:

- Project Management
  - Required courses: ENMA 804, 814 and 828 (or 800)
- Systems Engineering
  - Required courses: ENMA 803, 850, and 843 (or 863)
- Quality Systems
  - Required courses: ENMA 828, 863, and 803 (or 843)

Elective Course (6 credit hours). One or more of the following engineering management courses or courses from other departments in the Colleges of Engineering and Technology, Sciences, and Business and Public Administration is required. All electives must be at the graduate level and approved by the Ph.D. guidance committee and graduate program director.

- Elective courses: ENMA 800, 801, 803, 804, 814, 823, 828, 843, 850, 851, and 863.

Dissertation Research (minimum of 24 credit hours).

Exams. A qualifying exam is required in the first three semesters after admittance. A candidacy exam, a dissertation proposal defense, and a public dissertation defense are required after completing all course work.

Certificate of Professional (C.P.S.) Study in Engineering Management

The Certificate of Professional Study in Engineering Management is a non-degree certificate program for post-master’s degree students. The C.P.S. program is designed for working professionals who desire to continue their education beyond the master’s degree and advance to senior management positions. The program specifically prepares students for positions that involve the management of technology and the management of research and development programs and projects. Students must take all courses though Old Dominion University; no transfer courses are permitted for the C.P.S. Program.

Admission

Admission to graduate programs in engineering management is in accordance with the general requirements for graduate degrees as specified in the Graduate Admission section of this Catalog. Specific requirements for the Department of Engineering Management and Systems Engineering include the following:

Applicants for C.P.S. must have a bachelor’s or master’s degree from an accredited institution in engineering, engineering technology, applied science or applied mathematics, and at least 27 semester hours of gradu-
ate study approved by the graduate program director. An undergraduate GPA of at least 3.00 and a graduate GPA of at least 3.50 (on a 4.00 basis) are required for regular admission. GRE general aptitude scores are required. Students lacking adequate academic preparation may be admitted provisionally and may be required to complete coursework in addition to the graduate admission requirements. A minimum TOEFL score of 550 is required for all international students when English is not their first language. All admitted students must submit a Plan of Study.

Program Requirements

The Certificate of Professional Study in Engineering Management requires the completion of 24 credit hours of post-master’s course work.

Core Courses (9 credit hours): All students must take ENMA 815, 817, and 821.

Elective courses (15 credit hours): Students select five of the following courses: ENMA 800, 801, 803, 804, 814, 823, 828, 843, 850, 851, and 863.

GLOBAL ENGINEERING

Oktay Baysal, Graduate Program Director

Engineering and an engineer's day-to-day life have been dramatically transformed by the mega-mergers between the world's largest enterprises and the rise in global competition. Major engineering projects are increasingly dominated by cultural and linguistic differences. Global engineering programs aim to develop an awareness and understanding of global technologies, quality assurance standards, and differences in cultural, communication, and business practices and their impact on project teams in a global work environment. The global engineering program is structured to provide students with an in-depth focus on the nature, conduct and framework of disparate global engineering practices.

Global master's students are required to study at Old Dominion University in an approved engineering discipline with one semester of study abroad at one of the partner institutions. Each partner school offers a specialization where courses cover specific engineering disciplines and are taught in English. Old Dominion offers three specialization semesters: project management (Fall and Spring), computer engineering (fall), and telecommunications (spring). Partner schools offering engineering specialization semester include schools in France, Switzerland, Sweden, Ireland, Finland, Germany, the Netherlands, and Poland. (For more detail on approved modules, refer to www.inthee.org.)

When enrolled in courses at European partner institutions, Old Dominion students will be charged tuition at the same rate as residents of that country. In most cases, this means no tuition or very low tuition. The regular tuition charges are in effect for students during the semesters they attend at Old Dominion University. Students are responsible for their own transportation and living expenses while living abroad.

Admission

Admission to the global engineering master's program must be consistent with the Batten College of Engineering and Technology's graduate admission standards. Applicants should hold a B.S. in engineering or technology (if appropriate) with a minimum GPA (overall) of 3.00. This is equivalent to a B.Sc. at or above second class honors in an appropriate discipline from a European university. For U.S. students who have a 3.0 GPA or greater and have graduated from an ABET-accredited bachelor's degree program, the GRE is not required.

All lectures and tests within the global engineering program and its partnership schools overseas are given in English. As part of each specialization semester, however, students will attend lectures to learn the basics of the local language and culture. For students whose native language is not English, a TOEFL score of 550 is required.

Curriculum

Students must successfully complete three specialization semesters. One of these semesters must be completed at a partner European University. As each partner university offers a different specialization semester, location will also imply different in-depth study courses. Eighteen semester credit hours must be taken at Old Dominion University. Specialization semesters should be pre-approved to be equivalent to 12 graduate credit hours of course work. In total, the global engineering master's program requires 30 credit hours of graduate study.

Old Dominion University specialization semesters include the following.

Project Management: Project management provides students with the skills, knowledge, abilities, and attitudes required to manage and solve the problems of today's technology-based, project-driven enterprises in a global context. Students must complete ENMA 604 Project Management and choose three electives from the following:

- ENMA 600 Cost Estimation and Financial Analysis
- ENMA 601 Organizational Systems Design
- ENMA 602 Data Modeling
- ENMA 603 Operations Research
- ENMA 613 Logistics and Supply Chain Management
- ENMA 640 Integrated Systems Engineer I

Computer Engineering: The computer engineering specialization requires an undergraduate-level background in basic electrical and computer engineering skills. Therefore, students with an undergraduate background in either electrical engineering or computer engineering, with knowledge of basic digital hardware and some experience in C++ programming, should consider this option. The computer engineering specialization semester provides a mixture of first-year graduate-level courses on software and hardware. Students will select four of the following courses for this specialization:

- ENMA 610 Computer Architecture
- ENMA 611 Computer Organization and Design
- ENMA 612 Compiler Construction
- ENMA 613 Networks and Communications
- ENMA 614 Digital Signal Processing

Elective Courses: Elective courses are required for regular admission. GRE general aptitude scores are required for all international students when English is not their first language. Required for all international students when English is not their first language.

Telecommunications: This specialization provides a mixture of communications, signal processing, and computer networking. Students will select four of the following courses for this specialization:

- ENMA 651 Communications
- ENMA 655/CS 555 Networking and Data Communications
- ENMA 656 Introduction to Digital Communications
- ENMA 657 Optical Communications
- ENMA 658 Digital Signal Processing
- ENMA 659 Wireless Communications

Partners School Specialization Semesters: Specialization semesters offered by some Old Dominion University partner schools include:

- Supply Chain Management: Hogeschool Zeeland, Vlissingen, the Netherlands
- Technical Informatics in Engineering: University of Applied Science, Kaiserslautern, Germany
- Product Innovation: Dalarna University, Borlänge, Sweden
- Management: Berner Fachhochschule, Bern, Switzerland and Helsinki Polytechnic, Helsinki, Finland.

MATERIALS SCIENCE AND ENGINEERING

Mool C. Gupta, Graduate Program Director

The purpose of the multidisciplinary Master of Science (M.S.) and Master of Engineering (M.E.) degrees with a concentration in materials science and engineering is to develop a curriculum that addresses the student's need to specialize in engineering and science of materials used in the microelectronics, optoelectronics, polymers, composites, ceramics and metal market. The study of materials science and engineering includes: metals, alloys, ceramics, polymers, composites, semiconductors, and optoelectronic and biological materials used in structural, electronic, and optoelectronic sensors, actuators and other various applications. Specialization in materials science and engineering is essential for a large number of industries and government laboratories for the development of novel materials, increasing life expectancy of existing materials and preparation of devices and systems in the high technology arena. The industries and national laboratories that employ materials science engineers include: Motorola, IBM, Lucent Technologies, Intel, Xerox, Honeywell, Kodak, Hewlett Packard, Corning, GM, Ford, Chrysler, DuPont, Dow Chemicals, Exxon, Shell, Siemens, Boeing, Lockheed-Martin-Marietta, Newport News Shipbuilding, Canon, and Mitsubishi Chemicals along with hundreds of medium-size and small companies and NASA Laboratories, Argonne National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratory, etc.

The development and appropriate application of materials requires an interdisciplinary program. The objective of the program's subject core is to provide a common academic foundation for all materials science and engineering students. The program core subject consists of the areas of engineering of materials, semiconductor technology, polymer science, solid-state physics and a laboratory course in the area of instrumental analysis laboratory or principles of physical instrumentation.
Curriculum

Thirty credit hours are required. All students must have core courses that include: Modern Engineering Materials (ME 522), Semiconductor Process Technology (EC 777), Polymer Science (CHEM 695). Introduction to Solid State Physics (PHYS 518), and a laboratory course (PHYS 514 Principles of Physical Instrumentation or CHEM523 Spectroscopy Methods of Analysis or CHEM524 Electrochemical Methods of Analysis or CHEM 525 Separation Methods of Analysis.

Other courses that can be chosen to meet the master's degree requirements include: Advanced Materials Science (ME 621), Composite Materials (ME 650), Semiconductor Characterization (EC 774), Solid State Electronics (EC 573), Plasma Surface Engineering (EC 775), Materials Chemistry (CHEM 695), Polymer Chemistry Special Topics (CHEM 695), Surface Physics (PHYS 737), Structural and Properties of Materials (ME 526), Thermo-Mechanical Processing of Materials (ME 654), Environmental Effects of Materials (ME 524), Failure Analysis and Prevention (ME 652), Mechanical Behavior of Materials (ME 622), Electron Microscopy (BIOL 712), Engineering Analysis I (MATH 691), Engineering Analysis II (MATH 692), and Methods of Applied Mathematics (MATH 693).

An entering graduate student in materials science and engineering may desire to specialize in certain areas of materials science and engineering. The specialization areas may include: electronic materials, structural materials, and polymeric and biological materials. A student will work with a faculty member to design a curriculum based on core course requirements and the student's career goals and interest.

Thesis Research

Master of Science candidates must take six credits of thesis research under an approved thesis advisor. For more details contact: Mool C. Gupta
Applied Research Center, 12050 Jefferson Avenue, Suite 721, Newport News, VA 23606 757-269-5643 or by e-mail mgupta@odu.edu.

MECHANICAL ENGINEERING

Gene Hou, Graduate Program Director

The Department of Mechanical Engineering (ME) offers graduate programs leading to the degrees of Master of Science (M.S.), Master of Engineering (M.E.), and Doctor of Philosophy (Ph.D.) in two disciplines: mechanical engineering and engineering mechanics. The department also offers a Master of Engineering program with an emphasis in design and manufacturing. The department has 13 full-time faculty and an enrollment of approximately 200 undergraduate and 110 graduate students.

The Department of Mechanical Engineering is closely associated with area industries, consulting firms, government agencies, and research laboratories, such as NASA Langley Research Center. This association adds a special degree of relevance to the graduate engineering curricula and creates a stimulating environment for the pursuit of graduate studies. The department also maintains the Institute of Computational and Applied Mechanics funded in part by NASA Langley Research Center.

Graduate engineering programs in the ME Department are designed to serve both part-time as well as part-time graduate students and are administered by the graduate program director (GPD). Many graduate engineering courses are offered at times and locations convenient to those with full-time jobs. For instance, the college participates heavily in the Peninsula Higher Education Center (PC) for personnel from NASA Langley Research Center, Jefferson Labs, Newport News Shipbuilding and other industrial organizations on the peninsula. This center serves as the receiving site for the ODU-VPI-UVA TV consortium, as well as a receiving site for the graduate TV courses taught on the main campus.

The graduate programs have been designed to prepare students for professional practice in many facets of mechanical engineering and engineering mechanics, including teaching, research, development, design, and consulting. Graduates are prepared for challenging and creative work in mechanical engineering and engineering mechanics with most industries, research organizations, consulting firms, and government agencies.

A graduate student in mechanical engineering or engineering mechanics may select specializations in technical areas such as computational fluid mechanics, automatic controls, computational mechanics, fluid mechanics, thermal sciences, soil mechanics, materials science, dynamics and vibrations, design and manufacturing, energy conservation, and solid energy. The student is encouraged to select a minor in another area, such as mathematics, physics, oceanography, engineering mechanics, or mechanical engineering. For all applicants, a Graduate Record Examination score must be submitted.

Master’s Degrees

Mechanical Engineering and Engineering Mechanics

Applicants will generally have completed a bachelor's degree in engineering or a closely related discipline. For those applicants with non-engineering degrees, the undergraduate program should have included the subject matter prerequisite for graduate study in mechanical engineering and/or engineering mechanics. If this is not the case, a remedial study plan may be designed for an applicant by the graduate program director upon the applicant's request.

Students should refer to the Department of Mechanical Engineering's Graduate Handbook for additional degree requirements, rules, and regulations.

Design and Manufacturing Emphasis

The graduate emphasis in design and manufacturing incorporates an interdisciplinary approach to design and manufacturing. After core course requirements are met, the program provides enough flexibility to enable students to choose a study path that matches their own academic and professional goals. This emphasis area has the following innovative features:

- Interdisciplinary program, involving courses in computer science, engineering management, and mechanical engineering;
- A series of 1-credit hour courses offered by industry experts to put emphasis on real-life applications;
- Incorporation of design, manufacturing, and materials studies;
- Combination of design, analysis, and computer simulation courses; and
- Project course for students who have an industrial sponsor or a faculty advisor willing to supervise the project.

The program offers a Master of Engineering degree in mechanical engineering with specialization in design and manufacturing disciplines. The program requires 30 credit hours of courses after the bachelor's degree in mechanical engineering, or equivalent, and may be completed in one calendar year (12 months). Students must take four core courses and six non-core courses to complete the 30-hour requirement.

The mechanical engineering core courses, developed specifically for this program are:

- Applied Mathematics for Design and Manufacturing
- Advanced Design
- Concurrent Engineering
- Robots and Manufacturing Automation

An approved list of non-core courses can be obtained from the department. Students should refer to the Department of Mechanical Engineering's Graduate Handbook for additional degree requirements, rules, and regulations.

Doctor of Philosophy

Mechanical Engineering and Engineering Mechanics

Applicants will generally have completed a master's degree in engineering or a closely related discipline. For those applicants with degrees in fields other than mechanical engineering or engineering mechanics, previous course work should include the subject matter considered prerequisite for this doctoral program. If this is not the case, a remedial study plan may be designed for an applicant upon the applicant's request. Students should refer to the Department of Mechanical Engineering Graduate Handbook for additional degree requirements, rules, and regulations.

MODELING AND SIMULATION

R. Bowen Loftin, Graduate Program Director and Director of Simulation Programs

Master of Science (M.S.) and Master of Engineering (M.E.) degrees with a concentration in modeling and simulation are offered to prepare professionals to deal with contemporary simulation development and application issues. These degree programs have the objectives of being integrative across disciplines, discovery producing, and job-oriented. The Ph.D. in engineering with a concentration in modeling and simulation prepares graduates to conduct and evaluate original research in the area of modeling and simulation. The programs are administered by the University's director of simulation programs and the graduate program director.

A significant resource to the program is the Virginia Modeling, Analysis and Simulation Center (VAMAS) whose primary purposes include the
advancement of the state-of-the-art in modeling and simulation through research and development and the transfer of modeling and simulation technology to industry, education, and government. Constituent interest in this center is shared by numerous industrial partners as well as local Department of Defense organizations, including the U.S. Joint Forces Command, the U.S. Air Force, the U.S. Army, and the U.S. Navy.

Models are useful approximations or substitutions for real-world phenomena and systems. Simulation is the process of eliciting and observing a model's behavior over time. Successful simulation depends on the integrity of the underlying model, usually physics-based or probabilistic in nature, as well as the appropriate methodologies used to perform the computations. One of the principal technical challenges of present-day simulations is the integration of numerous models into a complex scenario for answering "what if" questions or for providing a robust environment for training and mission rehearsal.

The development and appropriate application of such complex simulations require that the education of simulation specialists be broad-based. The "simulationist" is required to have knowledge of modeling methods, simulation construction, and computing environments as well as insight into the application domain of interest. These aspects underscore the multidisciplinary nature of simulation in both foundational preparation and in application. Consequently, the modeling and simulation master's programs draw upon expertise from programs within the College of Engineering and Technology, the College of Sciences, and the College of Education. Participating departments include the Departments of Defense Management and Systems Engineering, Electrical and Computer Engineering, Computer Science, Psychology, and Occupational and Technical Studies. Other departments in the University are drawn upon as appropriate.

Web Site. Up-to-date announcements, program changes, course availability, faculty contacts, and scheduling information can be found at the modeling and simulation program's web site: www.eng.odu.edu/simulation. The VMASC website (www.vmasc.odu.edu) also contains useful information about the center's complementary research programs.

Master's Degrees—Modeling and Simulation

R. Bowen Loftin, Graduate Program Director

The master's degrees in modeling and simulation emphasize a strong, common subject core while providing the student with the flexibility to design a plan of study to meet each individual's study objectives and needs. The purpose of the program's subject core is to provide a common academic foundation for all simulation students. Thus, all students in this program will have a grounding in the same methods, principles, and philosophy of simulation. This provides the mechanisms for the simulationist to work across disciplines and domains while maintaining a common frame of reference for communication, technical specialization, and advanced study and research. The program subject core consists of (1) an overview of modeling and simulation, (2) an examination of essential elements of computer science that are widely used by simulationists, (3) simulation system modeling principles and paradigms, (4) an in-depth exploration of a specific simulation methodological approach (e.g., discrete event simulation), and (5) human-computer interaction.

Admission

Old Dominion University recognizes that students and professionals in numerous fields and industries use some form of simulation and modeling already. This diverse experience is factored into the admissions process for the graduate programs in modeling and simulation. The graduate program director and the director of simulation programs approve admissions based on the basic academic admission requirements of the University and on demonstrated familiarity or experience with the modeling of physical, behavioral, or decision processes. Applicants may demonstrate such familiarity with a combination of education, specialized training and professional experience, not necessarily in an engineering discipline. For example, a degree in a non-technical discipline, coupled with advanced training and relevant professional experience may be enough to establish sufficient background for admission to one of the master's programs in modeling and simulation.

Applicants are expected to have earned a bachelor's degree (or a bachelor's degree in science or engineering or a degree with documented job experience and training) that emphasizes modeling and abstraction. It is preferable that applicants have been exposed to the principles of mathematics (especially calculus, matrix algebra, and statistics), science models, and a high-level programming language. Applicants pursuing electives emphasizing simulation development should have a working knowledge of C++, algorithms, and data structures. A minimum GPA (overall) of 2.80 and a minimum GPA of 3.0 in the student's undergraduate major are required. Students with notable deficiencies may be considered for provisional admission and will be required to complete prerequisite course requirements in addition to the graduate degree requirements. Job experience and training may be considered in evaluating prerequisite requirements. Submission of GRE scores is required if the overall GPA is below 3.0 or if the applicant is seeking financial aid.

Please visit the GRE web site to find schedules and convenient locations for taking the computer-based exam.

Required Application Documents:
- Transcripts (from all colleges/universities attended since high school)
- GRE Scores (if overall GPA < 3.0)
- Personal Statement
- Portfolio (optional) containing relevant job and training experience (include documentation)
- TOEFL Scores (international students only) - Minimum Score - 600

If financial aid is being requested, also include: (1) two letters of recommendation from former instructors (and/or work supervisors if five or more years past graduation) and (2) GRE scores.

Visit the Office of Admissions for an application.

Curriculum

The Master of Engineering and the Master of Science in Engineering with a concentration in modeling and simulation each require 30 hours of graduate credit. The Master of Science in Engineering with a concentration in modeling and simulation requires six hours of thesis credit. The Master of Engineering with a concentration in modeling and simulation requires six hours of credit through a capstone project course. In addition to the thesis and capstone requirement, 15 credit hours of foundation courses and three credit hours of graduate-level statistics are required. Foundation courses provide an overview of modeling and simulation relevant areas of computer science and focus on the topics of discrete-event simulation, systems modeling, project management, and human/computer interaction. Nine to 12 elective credits are necessary to complete the degree requirements. The graduate program director and the director of simulation programs work with each student to select the courses that both meet the needs of the student and also follow an acceptable and appropriate theme.

Prerequisites. Mathematics and Computer Science: All students must have mathematics course work through the level of MATH 212 and 304 (calculus and matrix algebra). Some working knowledge of a high-level computing language (in particular JAVA is recommended for MSIM 602) is also required. Statistics: Students without experience or previous course work in probability and statistics must take STAT 617 or ENMA 520 or their equivalent as early in their program as possible. Students not meeting these requirements must consult with the graduate program director or the director of simulation programs to develop a course of study to effectively and efficiently satisfy these prerequisites.

Foundation Courses. Required foundation courses include:
- MSIM 601 Introduction to Modeling and Simulation (3 credits)
- MSIM 602*Computer Science Concepts for Modeling and Simulation (3 credits)
- ECE 605 Introduction to Discrete Event Simulation (3 credits)
- ECE 605 Systems Modeling (3 credits)
- PSYC 662 Human Computer Interfaces (3 credits)

*Not required of students with computer science degrees.

These courses may be cross-listed with equivalent course work in the participating departments.

Elective Courses. Elective course work will be selected, in consultation with the graduate program director or the director of simulation programs, to fit a theme or concentration in simulation. Such themes might include simulation development, simulation-based instruction, and human-simulation interaction.

Capstone Course and Thesis Research. Several capstone course options are available for the Master of Engineering program, depending on the area of concentration selected. Available capstone courses include MSIM 698, ECE 704, ENMA 605, and OTED 785. Master of Science candidates must take six credits of thesis research in the home department of their thesis advisor or six credits of MSIM 699.
Doctor of Philosophy in Engineering—Modeling and Simulation

R. Bowen Loftin, Graduate Program Director

The Ph.D. in Engineering with a concentration in modeling and simulation program focuses on developing the necessary skills and knowledge to enable the graduate to conduct and evaluate independent, original research in an area of modeling and simulation. The goal of the program is to prepare students for careers in teaching and research at academic institutions, as well as the conduct of leadership of research and development in public and private organizations.

This doctoral program is housed within the Batten College of Engineering and Technology, and the degree is awarded through the college. The program, however, draws upon courses and faculty from at least nine different academic departments and three colleges of the University. The program is administered by the University's director of simulation programs and the graduate program director.

Admission

Admission to the Ph.D. program with a concentration in modeling and simulation is in accordance with Old Dominion University and Batten College of Engineering and Technology requirements for doctoral programs as specified in this Catalog. Specific additional requirements for the modeling and simulation concentration include:

1. Completion of a master's degree in an appropriate field is expected. However, students who have completed 24 semester credit hours of post-baccalaureate and/or graduate courses in an appropriate field from an accredited institution may petition for direct admittance to the program.

2. A minimum GPA in graduate course work of 3.50 (out of 4.0) is required of most students. A student with a GPA greater than 3.25 and with evidence of a high level of professional capability in the field of modeling and simulation will be eligible for admission to the program upon submission of a petition to the graduate program director.

3. Recent scores (typically, not more than five years old) on the Graduate Record Examination's (GRE) verbal, quantitative, and analytical sections must be submitted by all applicants. In general, while there are no minimum required GRE scores, applicants with GRE scores (verbal + quantitative) of less than 1000, together with a grade point average at the master's level of less than 3.5/4.0, are discouraged from pursuing the Ph.D. degree unless other evidence of a high level of professional capability is presented.

4. Three letters of recommendation (typically at least two of which are from faculty in the highest degree program completed when the application is within four years of graduation from that degree program) are required.

5. The applicant must submit a statement of purpose, goals and objectives related to the program.

Curriculum

The Ph.D. degree in engineering with a concentration in modeling and simulation is offered in accordance with the general requirements for Ph.D. degrees as specified in the Requirements for Graduate Degrees section of this Catalog. Specific program of study requirements for the concentration in modeling and simulation include:

1. Total—72 credit hours (minimum)
   - Course work from master's degree/graduate education—24 credit hours (maximum)
   - Course work beyond the master's degree—24 credit hours (minimum)
   - Dissertation research—24 credit hours (minimum)

2. Successful completion of a written qualifying examination

3. Successful completion of written and oral candidacy examinations

4. The successful defense of a written dissertation proposal before the completion of nine hours of dissertation research

5. The completion of a dissertation representing independent, original research worthy of publication in a peer-reviewed scholarly journal

6. The successful public defense of the dissertation before an audience which includes an appropriately selected committee of faculty knowledgeable in the field of the subject.

Prerequisites or Expected Foundation Knowledge. Applicants are expected to have had the following courses:

- Mathematics—15 hours of mathematics beyond college algebra, including multivariate calculus, probability and statistics, linear algebra;
- Computer Science/Engineering/Technology—Programming competency in a high-level language (C or C++ recommended), data structures and algorithms;
- Human Factors—Human factors/human engineering/human-machine interfaces/human-computer interfaces;
- Simulation and Modeling—Discrete-event simulation, continuous or real-time simulation*, multiple simulation paradigms, mathematical model development.

*The applicant must have demonstrated academic or industrial experience in some specialty of simulation. Applicants with deficiencies may be required to undertake additional course work to address these deficiencies. Up to six graduate credit hours of course work are required to meet expected foundation knowledge and may be applied toward the Ph.D. program of study with the permission of the graduate program director or the director of simulation programs.

Program of Study Requirements

The program of study for the modeling and simulation concentration is developed with the approval of the graduate program director and the student's advisor (if applicable). The program shall contain a minimum of 24 credit hours of course work beyond the master's degree distributed as follows:

1. Common Core—12 credit hours
   - MSIM 810 Advanced Discrete Systems Simulation (3 credits)
   - MSIM 820 Foundations for Continuous and Real-Time Simulation (3 credits)
   - MSIM 830 Simulation Modeling Theory and Formalisms (3 credits)
   - MSIM 888 Ph.D. Seminar: Advanced Simulation Systems (3 credits)

2. Minimum of 12 credit hours of elective courses that provide a basis for dissertation research. No more than six credit hours from coursework satisfying foundation knowledge requirements may be included in the program of study for elective credit. At least three-fifths of non-dissertation course work must be at the 800 level.

Commonwealth Graduate Engineering Program (CGEP)

Berndt Bohm, Director

The Commonwealth Graduate Engineering Program coordinates graduate engineering degree programs offered through a cooperative agreement involving the state's five largest engineering colleges: Old Dominion University, the University of Virginia (UVA), Virginia Polytechnic Institute and State University (VP&SU), George Mason University (GMU), and Virginia Commonwealth University (VCU). Courses are taught by faculty members from these universities via a statewide interactive television network. Telecommunications classrooms have been established on the Old Dominion University campus, in the Peninsula Higher Education Center (Hampton), and in industrial sites throughout the Hampton Roads area.

The following degrees are offered through the program: Master of Engineering (Old Dominion University, UVA), Master of Engineering Management (Old Dominion University), Master of Engineering Administration (VP&SU), Master of Science (Old Dominion University, VP&SU), and Master of Materials Science (Old Dominion University). Program disciplines include aerospace engineering, civil engineering, chemical engineering, design and manufacturing, electrical engineering, engineering management, environmental engineering, experimental methods, industrial engineering and operations research, materials science, mechanical engineering, systems engineering, and modeling and simulation.

Students seeking admission to the various degree programs should request and process their applications through the Commonwealth Graduate Engineering Program Office, College of Engineering and Technology, Old Dominion University. www.eng.odu.edu/cgep.

Virginia Consortium for Engineering and Science Universities (VCES)

VCES is a consortium established by the Commonwealth of Virginia consisting of Old Dominion University, the College of William and Mary, the University of Virginia, and Virginia Polytechnic Institute and State University. It is located in Hampton, VA, only a few miles from NASA Langley Research Center. The agreement between these institutions allows students to take courses from any of the participating institutions. Students declare themselves as VCES applicants and go through the standard procedure of being accepted by a chosen university graduate school. A course of study is determined with the student's major professor and with the assistance of the VCES director and resident faculty. The applicants may also obtain themselves as VCES applicants and go through the standard procedure of being accepted by a chosen university graduate school. A course of study is determined with the student's major professor and with the assistance of the VCES director and resident faculty. The applicants may also obtain
The College of Health Sciences provides opportunities for specialization within various fields, including public health, health services research, community health, health care management, and long-term care administration. The college features programs with master's, laureate, and doctoral degrees, as well as undergraduate and graduate programs.

**Program Application, Acceptance, and Continuance**

A separate application must be submitted for each program. Application information and deadlines are listed on the specific program sections of the catalog and on the website.

**Acceptance to the University does not constitute or guarantee acceptance into a health science major.** Students are notified by the program director of their acceptance and any other program-specific requirements, such as physicals, immunizations, technical standards, etc.

Continuance in the health science majors requires strong academic achievement, including successful completion of knowledge and use of practical and critical thinking skills in both laboratory and clinical rotations. Criminal background checks may be required as specified in course syllabi. Any student deemed unacceptable for clinical rotation due to results from a criminal background check will not be allowed to complete the program of study.

**Advanced Placement**

Advanced placement credit may be earned for courses offered by the College of Health Sciences upon validation of mastery of the subject matter and skills covered in the respective course(s). A fee may be charged for the assessment of competency. Please check with the school offering the course for further information.

**General Education – New Portal to Appreciating our Global Environment**

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer than 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

All majors in the College of Health Sciences may substitute GEN 101 for a course in one of the following perspectives: fine and performing arts, history, or literature. Students should consult their advisors for additional information.

**Graduate Programs**

The College of Health Sciences has developed graduate programs in health-related professions that prepare individuals for practice, teaching or administration in health-care delivery to meet the needs of the region, the state, and the nation. These programs include Master of Science degrees in community health and dental hygiene, the Master of Science in Nursing degree, the Master of Public Health, the Doctor of Physical Therapy degree, and the doctoral program in urban services-health services concentration.

**Continuing Education Programs**

Continuing education serves the following functions: (1) licensure and certification for professionals and practitioners, (2) credential and degree achievement and (3) professional development to update knowledge and skills. Clientele served by the programs include nursing and allied health professionals, human service workers, managers and supervisory personnel, technicians, laboratory personnel, and health educators. Visit the website to view current offerings.

**COMMUNITY AND ENVIRONMENTAL HEALTH**

Environmental health is the study and management of factors that adversely affect the environment and the health and well-being of humans. The curriculum in environmental health is accredited by the National Environmental Health Science and Protection Accreditation Council and encompasses a variety of disciplines in the preparation of environmental health specialists, industrial hygienists, and occupational safety specialists.

Environmental health specialists are responsible for education, consultation, and enforcement relating to local, state, and federal laws, regulations, and standards governing the safety and sanitation of air, water, milk, food, solid, hazardous and infectious wastes, sewage, housing, institutional environments, and other health hazards. They are active participants in the overall environmental quality within a community and prevention of diseases associated with environmental factors. Industrial hygienists conduct health hazard evaluations, perform health effects/risk assessment research, and manage health programs in industries or government organizations. They anticipate, recognize, evaluate, control, and eliminate health hazards in industry, the community, or the environment. Occupational safety professionals similarly anticipate, identify and evaluate hazardous conditions and practices in the workplace. They develop, implement, administer, measure and evaluate the effectiveness of hazard control programs.

The program requires six credit hours of field practice or internship within an environmental health setting, either a governmental or industrial site. A variety of internship sites are available in the Hampton Roads area for these experiences. Internship sites elsewhere in the state, nation, or world can also be arranged if desired. Internships are typically taken the summer between the junior and senior year. Students are responsible for providing their own transportation to these sites. Upon graduation, students are eligible to sit for the professional licensing examination in environmental health. With experience, students are eligible to take the certification examination in industrial hygiene and/or occupational safety.
A broad spectrum of employment opportunities is available to graduates whose employment success has been outstanding. Graduates have found positions in local, state, and federal health and environmental agencies such as the FDA, USDA, EPA, OSHA, NASA, and DOD. Many work in hospitals, industries, insurance companies, laboratories, consulting firms, waste and wastewater plants, and other organizations, agencies and firms.

Admission

Students may be admitted to the program on the satisfactory completion of 60 semester hours of recommended study of required prerequisite courses and with the approval of the program director. Exemptions may be appealed through the program director. Students who fail to meet the established deadline for formal admission will usually be allowed to take environmental health courses if space is available; however, permission must be granted by the program director prior to registration.

Requirements

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGL 110C and 131C required)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (COMM 101R required)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (STAT 130M and MATH 162M required)</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major)</td>
<td>0-3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>12</td>
</tr>
<tr>
<td>(BIOL 108N-109N and PHYS 111N required)</td>
<td></td>
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</tbody>
</table>

**Social Science**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 103 Basic Bacteriology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 311-312 Organic Chemistry with lab</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 313 Organic Chemistry (lab not required)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 190 Anatomy and Physiology</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must complete the following courses prior to acceptance into the Environmental Health program:

- BIOL 190, 108N-109N, CHEM 115N-116N, 311-312-313;
- COMM 101R, ENGL 131C, MATH 162M, BIOL 103;
- STAT 130M, and PHYS 111N.

**Major Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVH 301W</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 401 Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 402W</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 403 Internship I</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 404 or 405</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 406</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 420</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 422</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 441 Industrial Hygiene</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 443 Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 448 Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 466 Risk Assessment</td>
<td>3</td>
</tr>
<tr>
<td>ENVH 499 Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ENVH Electives</td>
<td>(consult with advisor for areas of specialization)</td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A Approved Minor, 12-24 hours; also second degree or second major.</td>
<td></td>
</tr>
<tr>
<td>Option B Cluster, 9 hours (3 hours may be in the major area of study.)</td>
<td></td>
</tr>
</tbody>
</table>

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, minimum 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Minor in Environmental Health

A minor in environmental health requires a minimum of 12 semester hours of environmental health courses. Minor course requirements include ENVH 301W and three electives from the environmental health courses approved by the program director. For completion of the minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. Twelve semester hours of science courses are preferred.

Minor in Occupational Safety

A minor in occupational safety is available in the environmental health program and requires a minimum of 12 semester hours of ENVH courses in safety. The minor in occupational safety is designed to prepare students to meet safety standards and guidelines in such areas as business, education and industry with the goal of managing operations to minimize financial losses resulting from accidents, health claims, legal actions and property damage. It is especially attractive to students in majors such as engineering, occupational and technical studies, and business who may reasonably anticipate assignment of safety as an additional duty. Minor course requirements include ENVH 406, 407, 425 and 426. For completion of the minor students must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Certificate in Occupational Safety

The certificate program in occupational safety is designed to prepare students to meet safety standards and guidelines in such areas as business, education and industry with the goal of managing operations to minimize financial losses resulting from accidents, health claims, legal actions and property damage. It is especially attractive to students in majors such as engineering, occupational and technical studies, and business who may reasonably anticipate assignment of safety as an additional duty, or to individuals already employed in the environmental health and safety field. Courses taken in the certificate program may be applied to degree requirements at both the undergraduate and graduate levels in environmental health. For completion of the undergraduate certificate program students must have a minimum cumulative grade point average of 2.00 (3.00 for the graduate certificate) in all courses taken toward the certificate. After successful completion of the program, a Certificate in Occupational Safety will be awarded. A total of 15-16 semester hours is required comprised of three core courses and six to seven hours of electives. Core courses include: ENVH 406/506, 407/507, 425/525. Electives may be selected from the following courses: ENVH 401/501, 426/526, 440/540, 441/541, 442/542, 446/546, or NMED 335. There are no prerequisites.

Bachelor of Science in Health Sciences (B.S.H.S.)

www.odu.edu/bshs

Sandra Breeden, Program Director

The Bachelor of Science in Health Sciences is designed to offer advanced educational experiences to health professionals who are licensed and/or who have completed a certification or Associate of Science degrees in a health related discipline, have credentials to practice in their field, and have experience as a health care provider. This program builds on the expertise of practicing health professionals and allows them the opportunity to enhance their formal learning. The program focuses on upper-level course work and general education in conjunction with an area of career enhancement chosen by the individual student. Common areas may be management or counseling. For further information, contact the director, B.S.H.S. program, College of Health Sciences.

Bachelor of Science in Health Sciences With a Human Services or Management Minor

Students must have an associate degree in a health-related area or license or certification to practice in a health-related area to be eligible for admission to the B.S.H.S. program. Eligibility must be documented with the separate admissions form to the B.S.H.S. program.
LOWER DIVISION GENERAL EDUCATION

Written Communication 6
Oral Communication (can be satisfied in the major by CHP 450) 3
Mathematics 3
Foreign Language 0-6
Computer Skills 0-3
Fine and Performing Arts 3
History 3
Literature 3
Philosophy 3
Natural Science and Technology 8

Eight credit hours of Natural Science with labs in sequence. The additional 3-4 credit hours of Natural Science or Technology are met through the major.

Social Science 3

Major Electives
(choose five courses from the following three-credit courses)
Any CHP course (must include one writing intensive course and one oral intensive course)
CNTH 311 Environmental Health
VET 407 Veterinarian Assistant
MGMT 325 Principles of Management
MEDT 403W Management in the Clinical Setting
NAMED 300 Medical Terminology

Select one minor area:

Human Services Minor (15 hours)
COUN 339 Interpersonal Relations 3
COUN 341 Intro Human Services Counsel 3
COUN 346 Diversity Issues in HSC 3
COUN Elective (Choose two from COUN 447, 448, 491) 6

Management Minor (15 hours)
MGMT 325 Principles of Management 3
MGMT 300-400 Electives 12
(Choose as many as needed from MGMT 340, 350, 360, 368, 417, 418, 451, 452, 462)

Professional Electives (39-51 hours)
Licensure, certificate, registration as a health professional, or Associate of Applied Science degree from a Virginia Community College will be used toward satisfying the Professional Electives requirements. Consult the academic advisor for specific information as additional programs can be considered. The following are programs that candidates have been accepted: Radiation Technology Nursing, Occupational Therapy Assistant, Dental Hygiene, Emergency Medical Technology, Respiratory Therapy, and Physical Therapy Assistant. Other (minimum 15 credits from a professional health program and A.A.S degree).

UPPER DIVISION GENERAL EDUCATION

Satisfied through program-required minor in human services or management. Requirements for graduation include a minimum cumulative grade point average of 2.00 overall in the major and in the minor, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Accelerated Program–Bachelor of Science in Health Sciences (B.S.H.S.) to Master of Science in Community Health

B.S.H.S. students who have a 3.00 GPA from each institution attended and who have senior standing may apply for acceptance into the B.S.H.S. to M.S. community health accelerated program. This program allows gifted undergraduate B.S.H.S. students the opportunity to take up to 12 semester hours of graduate course work and apply them to both degrees. Other restrictions apply. Consult with the B.S.H.S. director for more information.

Minor in Community Health

An undergraduate minor in community health can be obtained by the completion of 12 credit hours from the following courses: CHP 300, 318, 360, 400, 413W, 420, 425, 430W, 450, 455, 456, 460, 470, 480. CHP 495 or 497 may count toward the minor if prior arrangements are made and approval given by the community health undergraduate advisor. DNTH 415, ENVH 301W, ENVH 401, MEDT 403W, or NMED 300 may be substituted for one CHP course. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Gerontology

The minor in gerontology is designed to complement the student's major field of study and will enhance opportunities for employment or graduate study. Completion of the minor will provide the student with a second recognized area of study that brings the disciplines of community health, exercise science and psychology together to provide a multidisciplinary program focused on the aging process and the needs of the elderly. The requirements include 12 credit hours from CHP 420, 425, 470, RTS 450 and an optional internship, CHP 369. Students must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Certificate Programs Applied to the Bachelor of Science in Health Sciences (B.S.H.S.)

Through special agreements and curriculum design, courses for the certificate programs in cytotechnology, offered by the School of Medical Laboratory and Radiation Sciences, and ophthalmic technology, offered by the Eastern Virginia Medical School, may be applied as special tracks in the Bachelor of Science in Health Sciences. The certificate in cytotechnology can be found in the School of Medical Laboratory and Radiation Sciences section of this catalog.

Cytotechnology Certificate Track in the B.S.H.S.

Sophie K. Thompson, Program Director

This option is available only to second degree students. Specific information can be found in the School of Medical Laboratory and Radiation Sciences.

Ophthalmic Technology Certificate Track in the B.S.H.S.

www.evms.edu/ophthalmology/optech

Lori J. Williams, Program Director

The Certificate Program in Ophthalmic Technology is designed to produce an ophthalmic technologist with a strong background in the basic sciences and a high degree of technical competence in ophthalmic technology. The certificate, offered by the Department of Ophthalmology, Eastern Virginia Medical School, fulfills the professional electives requirements in the Bachelor of Science in Health Sciences offered by the College of Health Sciences, Old Dominion University. The preclinical and general education courses will be offered at Old Dominion University and the clinical program through Eastern Virginia Medical School and its clinical affiliates.

After successful completion of the program, the student will be awarded a certificate of completion from Eastern Virginia Medical School and Old Dominion University and will be eligible to sit for the written examination or national certification through the Commission on Accreditation of Allied Health Education Programs/Joint Commission on Allied Health Personnel in Ophthalmology. Prior to consideration for admission to the ophthalmic technology program, each applicant must complete the required prerequisite courses, or equivalents, maintaining a grade point average of at least 2.00 (4.00 scale). For full consideration applications should be submitted by February 1 for the class starting in August.

Ophthalmic Technology Track in the Bachelor of Science in Health Sciences

FIRST YEAR

<table>
<thead>
<tr>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
</tr>
<tr>
<td>ENGL 110C or BIOL 115N</td>
</tr>
<tr>
<td>CHEM 101N</td>
</tr>
<tr>
<td>MATH 102M</td>
</tr>
<tr>
<td>Computer Skills</td>
</tr>
<tr>
<td>Fine and Performing Arts Perspective</td>
</tr>
</tbody>
</table>

COLLEGE OF HEALTH SCIENCES 199
Master of Science—Community Health

Clare A. Houseman, Graduate Program Director

The School of Community and Environmental Health offers graduate programs leading to careers in the nation’s health system. Special emphasis in each of the CHP courses is placed on the examination of current trends, issues, problems, and possible solutions. It provides a preparatory base for administrative and academic careers in specialties as well as general areas of community health. Emphasis areas are available in community health education/promotion, health-care management, environmental health, and long-term care administration.

Many students who are selected for this program already have professional qualifications in the health-related fields: health education, physical therapy, environmental health, nursing, dental hygiene, or other disciplines. The course of study is designed to promote the development and application of the professional skills required to meet the leadership needs of the community health field in the United States.

The course of study covers a minimum of one full academic year, including summer school. It includes required general courses, elective courses in areas of special interest to the student, and opportunities for completion of a practicum or a thesis.

**Admission**

The selection of community health students is based on several criteria. To qualify for admission, an applicant must meet the general University admission requirements at the graduate level. In addition, the School of Community and Environmental Health requires:

1. Two letters of recommendation from teachers, supervisors, and/or employers.
2. Evidence of a basic foundation of undergraduate courses in the life sciences, behavioral sciences, and social sciences with a minimum 2.80 grade point average. If it is determined that a student is deficient in one of these three general foundation areas, he or she may be required to take additional course work prior to admission or to enroll in undergraduate course work to strengthen the foundation area.
3. A satisfactory Graduate Record Examination (GRE) aptitude score.
4. Work experience or voluntary participation in a health-related agency or program.
5. A career-goals paper. This paper asks the applicant to discuss his or her career goals and the relationship of the community health graduate program to those goals. This paper is evaluated by the faculty of the school for the applicant’s ability to present a clear sense of professional purpose, as well as his or her ability to write a concise and grammatically acceptable paper.

**Requirements**

The curriculum includes a 15-credit hour core of community health courses that constitutes the foundation of the program complemented by a minimum of six credit hours of practicum experience or six hours of thesis research.

The remaining courses recommended for completion of the program are intended to provide the student with the opportunity to develop an emphasis area that complements the core courses. The emphasis areas are intended to supplement the professional knowledge and skills that the student will apply in the practice of community health.

The program, therefore, includes a minimum of 38 hours of course work and examinations as follows:

- **Core Courses.** Fifteen credit hours must be selected from the following: CHP 515, 550, 600, 601, and either 530, 555, 556, 720 or 750.

- **Electives.** The remaining hours of required credits in the community health program will be earned in advanced courses making up an emphasis area. Current emphasis areas are community health education/promotion, health-care management, environmental health, and long-term care administration. Students may select a program tailored to their professional needs from the emphasis areas or other areas. The program of study must have the advanced approval of the graduate program director and the student’s emphasis advisor. Students are advised to consult the graduate program director and/or the emphasis area advisor in all matters concerning graduate work.

- **Comprehensive Examinations.** All candidates for the Master of Science with a major in community health must pass a written and an oral comprehensive examination covering the course work in the pro-

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### Health Care Management Certificate

This graduate-level certificate is designed for working individuals who attend part time. The certificate complements the student’s prior academic preparation and work experience, and the credit hours earned through the certificate will be applicable to the M.S. degree in community health with an emphasis in health care management once the student has been accepted into the Master of Science degree program.

The health care management certificate program requires 15 credit hours to be chosen from the following courses: CHP 526, 527, 530, 550, 630, 633, 635, 720, and 772.
gram of study. Comprehensive examinations are administered once a semester during the fall, spring and summer session. Students who select the thesis emphasis will be required to make an oral defense of their thesis in place of the comprehensive oral exam.

**Thesis or Practicum Option.** Students must complete a six credit practicum (CHP 695) or a six credit thesis (CHP 696).

**Emphasis Areas**

**Community Health Education/Promotion.** Clare Houseman, Advisor. The focus of the graduate community health program is the education of selected professionals in the philosophy, concepts, and methods used in the promotion of health and in the prevention and management of illness in the community.

**Health-Care Management.** Advisor: Clare A. Houseman. This emphasis area is for middle-level managers in the health environment and is planned to allow health professionals the opportunity to pursue graduate study to develop and improve their administrative capabilities. Courses may be selected from the following: CHP 630, 633, 635, 637, 720, 772, 775, 787. The management program is offered on Friday evenings through a combination of asynchronous web-based and TELETECHNET educational delivery systems. Basic computer skills are essential to participate in this program.

**Environmental Health.** A. James English, Advisor. This emphasis is designed to meet the needs of students seeking graduate education in the environmental health field. The goal of the program is to provide advanced understanding of human health efforts due to interaction with chemical, biological and physical agents in natural and man-made environments. Students may shape the emphasis area to meet their needs in general environmental health, industrial hygiene, occupational safety, or hazardous materials management. The emphasis has specific prerequisite courses at the undergraduate level which must be met. Also, admission to the program is at the discretion of the faculty. In addition to the core course requirements, there are specific course requirements for each concentration area.

**Prerequisite Courses.** General Biology (8 credits); General Chemistry (8 credits); Introduction to Physics (with a lab) or Geological Sciences (8 credits); General College Mathematics or Statistics (3 credits); ENHV 301W or equivalent.

**Core Courses.** Students must take the following required core courses: ENHV 600; CHP 600, 601; ENHV 502, 543, 548; and six credits from ENHV 501, 522, 526, 540, 545, 566, or other courses as approved by the program advisor. Six credits of thesis or practicum work are also required.

**Concentration Area Requirements.** Nine to 10 credit hours from the following courses or their equivalents must be taken in one of the following options in order to be eligible for the degree.

- **General Environmental Health:** ENHV 520, 521, 523, 524.
- **Industrial Hygiene:** ENHV 541, 542, 546, 722.
- **Hazardous Materials Management:** ENHV 561, 562, 564, 565.
- **Occupational Safety:** ENHV 506, 507, 525, 526, 570.

**Long-Term Care Administration.** Gail Grisetti, Advisor. This emphasis area is designed to meet the Commonwealth of Virginia’s requirements to be eligible to take the State and Federal examinations for licensure as a nursing home administrator. Completion of the program does not guarantee licensure, but should insure that the exams can be taken. Both CHP 520 and 550 are required, along with a six-credit hour practicum involving 400 clock hours in a nursing home under the supervision of a licensed administrator. The program aims to provide the enrollee with a background in gerontology and health, as well as in administration and management. The person with a background in health care and/or gerontology will need courses in the areas of administration and management. The person with a background in management/administration will need courses in health care and gerontology. All courses must be approved by the program advisor.

**Master of Public Health**

www.mphinfo@evms.edu

Robert Jacobs, Program Director, EVMS

Eastern Virginia Medical School and Old Dominion University jointly offer the Master of Public Health (MPH) degree program. The program provides graduates with an understanding of the public health sciences and knowledge and skills that can be used in health care management, population-based research and the community practice of public health. The MPH program has two specialty tracks: epidemiology and health management/policy. Students complete two courses per semester, a community practicum, and a final seminar which integrates knowledge gained through all courses. A summer internship is required for those students without substantial work experience in a community health setting. Students must pass a core examination at the end of the first year. The MPH degree will be granted jointly by the two sponsoring institutions. Completion of the program takes two and one-third years.

Health professionals who are or will be working in private, government, or community organizations with the following responsibilities can benefit from this program: assessing health status or needs in populations, designing and implementing programs, managing administrative functions, conducting program evaluation and outcomes research, developing coalitions, marketing health service, analyzing the epidemiology of specific diseases, and measuring or assessing the quality of health care and public health services and products.

Students who are not seeking the MPH degree may take up to three program courses.

**Core Courses (16 hours)**

- **Introduction to Biostatistics**
- **Principles of Epidemiology**
- **Health Education and Behavioral Science**
- **Health Administration and Organization**
- **Environmental Health Sciences**
- **Ethics in Public Health Practice**

**Specialty Track (18 hours)**

- **Epidemiology**
- **Health Management/Policy**

**Other Requirements (7 hours)**

- **Internship**
- **Community Practicum**
- **Capstone Seminar**
- **Core Examination**

The MPH program has received full accreditation from the Council on Education for Public Health.

**Doctoral Program in Urban Services–Health Services Concentration**

www.odu.edu/hsphd

Clare A. Houseman, Graduate Program Director

The Ph.D. in urban services program is planned for discontinuation and will be replaced by a Ph.D. in health services research in the College of Health Sciences.

**DENTAL HYGIENE**

www.odu.edu/dental

Deanne Shuman, Chair

The Gene W. Hirschfeld School of Dental Hygiene offers programs leading to the degrees of Bachelor of Science in Dental Hygiene and Master of Science with a major in dental hygiene. The dental hygiene program is accredited by the Commission on Dental Accreditation. Students successfully completing the bachelor of science in dental hygiene program are eligible to take the national, state, and regional board examinations in dental hygiene to become licensed dental hygienists.

The School of Dental Hygiene reserves the right to require remedial work of any student who does not perform at a level satisfactory for patient care. Annually, students are required to submit documentation of CPR certification and of certain prescribed immunizations and diagnostic procedures. Students are strongly advised to obtain the hepatitis vaccine. The University maintains liability insurance on the students while enrolled in the school.

The catalog describes the current curriculum, which is subject to revision and refinement as needed to keep abreast of current dental assisting and dental hygiene practices.

**The Dental Hygiene Research Center**

The focus of the center is to support research through collaborations and partnerships that will provide a foundation for dental hygiene services and practice, advance the practice of dental hygiene, and improve the oral health status of the public. Research capabilities are multifac-
Bachelor of Science in Dental Hygiene

The Gene W. Hirschfeld School of Dental Hygiene offers courses leading to a degree of Bachelor of Science in Dental Hygiene. The school also offers a baccalaureate program for dental hygienists who wish to obtain a bachelor’s degree after obtaining an associate degree in dental hygiene at another institution.

The baccalaureate program in dental hygiene is designed to prepare men and women as professional dental hygienists qualified for positions in a variety of health-care settings and/or for graduate study in dental hygiene. A dental hygienist is a licensed professional and member of the oral health care team who provides services to promote optimal oral health. Dental hygienists serve as clinical practitioners, educators, researchers, administrators, managers, program developers, consultants, or dental product sales representatives, depending on the individual’s employment setting and educational background. For example, career opportunities at the certificate level include service in general dental practice, specialty dental practice, or in the armed services. In addition, dental hygienists with bachelor’s degrees pursue careers in elementary and secondary schools, community and public health settings, institutional and industrial dental hygiene, professional education, and research. Other career opportunities exist in health maintenance organizations, community health agencies, private industry, and abroad with the Peace Corps, World Health Organization, and foreign governments.

Admission

Applicants for admission to the baccalaureate program in dental hygiene should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into dental hygiene without first being admitted to the University. Admission to the University does not constitute admission to the dental hygiene program.

Students are admitted to the school after completion of prerequisite courses and lower-level General Education courses. Transfer students may complete prerequisite courses at another college or university but are responsible for having a transfer credit evaluation completed by the Admissions Office to be used as documentation that transfer courses are acceptable. Candidates for admission to dental hygiene should indicate on the application to the University their intention to enter the dental hygiene program. Additionally, candidates should obtain an application to the dental hygiene program from the web site. Admission to the program is competitive. Admission decisions are determined by the selection committee of the school on the basis of academic qualifications. Basic requirements and credentials for application are as follows for the Bachelor of Science program:

1. Submission of the application to the University, official transcript, and required credentials to the Office of Admissions.
2. Completion of prerequisite courses prior to starting in the dental hygiene curriculum. Prerequisite courses covering subject areas required by the Commission on Dental Accreditation (Biol 103, Biol 250-251 or equivalent, Chem 101N-102N, Engl 110C, Soc 201S, and Psyc 201S) must be completed with at least a grade of C prior to National Dental Hygiene Board Examination eligibility and graduation. Completion of lower-level General Education requirements will make the applicant more competitive in the application process.
3. A minimum grade point average of 3.00 makes the applicant most competitive.
4. Applicants must complete at least twelve hours of observation in a dental facility to familiarize themselves with oral health care.
5. Submission of school application, all college transcripts, two recommendation form letters, and verification of observation in a dental facility by February 1. Incomplete application packets will not be reviewed and will be returned to the applicant.

Applicants accepted into the program will be notified in April by the director of dental hygiene. Those applicants who are not accepted will receive notice and should pursue general academic and science courses prior to reconsideration for admission. Applicants notified of formal acceptance by the director of dental hygiene will be advised for registration purposes by the school advisor.

Qualified high school seniors may apply for admission with guaranteed entry into the program in dental hygiene. For criteria and additional information, please contact the Office of Admissions.

Bachelor of Science Requirements

All courses with the prefix DNTH must be completed within two academic years due to scheduling and space limitations. A minimum grade of C (2.00) must be obtained in all of these courses. Courses must be taken in the prescribed sequence. It is recommended that students take the course, Preparation for Dental Hygiene Board Examinations, offered through the Office of Continuing Education.

Prerequisite Courses. Requirements prerequisite to the dental hygiene major are listed below. Students should enroll in other General Education courses during the prerequisite phase of study.

LOWER DIVISION GENERAL EDUCATION Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Oral Communication (satisfied through major course requirements)</td>
<td>0-3</td>
<td></td>
</tr>
<tr>
<td>Mathematics (STAT 130M required)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
<td></td>
</tr>
<tr>
<td>Computer Skills (satisfied in the major)</td>
<td>0-3</td>
<td></td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
<td></td>
</tr>
<tr>
<td>(Chem 101N-102N, Biol 103, and Biol 250-251 required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Science (Psyc 201S and Soc 201S required)</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Departmental Requirements

Students must complete the following courses with a C or better.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chp 318</td>
<td>Science of Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>Students must complete the following courses prior to entering the Dental Hygiene program:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biol 103, Biol 250-251; Chem 101N-102N; Engl 110C; Psyc 201S; and Soc 201S.</td>
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</table>

THIRD YEAR

Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Dnth 300</td>
<td>Dental Hygiene Theory I</td>
<td>4</td>
</tr>
<tr>
<td>Dnth 301</td>
<td>Dental Hygiene Services I</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 302</td>
<td>Oral Anatomy and History</td>
<td>4</td>
</tr>
<tr>
<td>Dnth 303</td>
<td>Applied Dental Materials</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 304</td>
<td>Oral Radiology I</td>
<td>2</td>
</tr>
</tbody>
</table>

Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dnth 305</td>
<td>Dental Hygiene Theory II</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 306</td>
<td>Dental Hygiene Services II</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 307</td>
<td>Pharmacology and Medical Emergency</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 308</td>
<td>Oral Pathology</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 309</td>
<td>Oral Radiology II</td>
<td>2</td>
</tr>
<tr>
<td>Dnth 310</td>
<td>Dental Hygiene Therapies and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Summer

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dnth 316</td>
<td>Dental Hygiene Theory &amp; Services III</td>
<td>3</td>
</tr>
<tr>
<td>Upper-Division General Education Course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Upper-Division General Education Course</td>
<td>3</td>
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</table>

FOURTH YEAR

Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dnth 410</td>
<td>Dental Hygiene Theory IV</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 411</td>
<td>Dental Hygiene Services IV</td>
<td>6</td>
</tr>
<tr>
<td>Dnth 413</td>
<td>Community Oral Health Planning</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 414</td>
<td>Educational Concepts for Health Prof I</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 415</td>
<td>Research Methods in the Health Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dnth 417W</td>
<td>Dental Hygiene Theory V</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 418</td>
<td>Dental Hygiene Services V</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 419</td>
<td>Community Oral Health Practice</td>
<td>3</td>
</tr>
<tr>
<td>Dnth 416</td>
<td>Admin, Leadership &amp; Prof Develop</td>
<td>3</td>
</tr>
</tbody>
</table>
UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 121 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Continuance Policy
In addition to the Old Dominion University continuance policies, the following policies are specific to all declared majors in the Gene W. Hirschefeld School of Dental Hygiene. A grade of D (1.00) in any dental hygiene course will result in academic dismissal from the program.

Policy on Readmission
1. A student who must repeat one or more courses in dental hygiene must first be readmitted to the program.
2. A student may be readmitted to the program only once.
3. Readmitted students who are on probationary status must maintain a minimum grade of C (2.00) in each dental hygiene course taken including courses taken for remediation.
4. Procedures for readmission:
   a. The student must submit a letter to the chair outlining his or her intent for readmission.
   b. The chair, in consultation with the faculty, will make a decision on the readmission request.
   c. Readmission will be granted on a space-available basis only after regular admissions have been filled.

Degree Completion Program
The degree completion program is designed for students who have completed a certificate or associate degree program in dental hygiene and desire to continue their education toward a Bachelor of Science in Dental Hygiene. The program provides an opportunity for dental hygienists to gain knowledge, skills, and attitudes necessary for expanded careers in education, oral health promotion, research, community health, management, and marketing. This program also provides a strong foundation for graduate studies. A minimum of 120 credit hours is necessary to obtain the baccalaureate degree. The length of time required to complete the program is determined by the number of college credits acceptable for transfer; however, at least 30 credit hours must be taken at Old Dominion University. Students can expect to complete the program in three to four academic semesters.

Admission
A dental hygienist from another institution who desires to pursue degree completion courses or seeks a Bachelor of Science in Dental Hygiene should apply to Old Dominion University as an upper-level dental hygiene transfer student. Formal acceptance as a dental hygiene major will be determined by the selection committee of the school.

Postcertificate and associate degree transfer applicants must meet the following requirements:
1. Submission of application and official transcripts to the Office of Admissions, Old Dominion University.
2. Graduation from an accredited dental hygiene program.
3. Passing score on the National Dental Hygiene Board Examination.
4. Recommendation letters from at least two of the following: director or clinical supervisor of the dental hygiene program attended, or current or most recent dental hygiene employer.

Applications and inquiries about the degree completion program may be directed to the Degree Completion Program, School of Dental Hygiene and Dental Assisting, Old Dominion University, Norfolk, VA 23529-0499, (757) 683-4310.

Curriculum
Certificate and associate degree transfer students must satisfy the following.

Prerequisite. Certificate or associate degree in dental hygiene.

Requirements. Successful completion of the University General Education requirements or the equivalent: DNTH 412, 414, 415, 416, and CPR certification, as well as University writing examinations.

All students will be required to demonstrate clinical proficiency prior to graduation. Students may elect the accelerated bachelor's to master's program option.

Accelerated Bachelor's to Master's Program
Dental hygiene students who have a 3.00 grade point average from each institution attended and who have senior standing may apply to the bachelor's to master's accelerated program. This program allows gifted undergraduate students the opportunity to take up to 12 semester hours of graduate course work and apply them to both degrees. Other restrictions apply. Some courses may be taken in a distance education format. Consult with the School of Dental Hygiene for more information.

Master of Science—Dentist Hygiene
Michele Darby, Graduate Program Director

The challenge of effecting change in the scope and direction of dental hygiene and health care requires expert skills in problem solving, evidence-based decision making, leadership, and research. Recipients of the Master of Science degree with a major in dental hygiene are afforded the opportunity to develop such skills to meet tomorrow's challenges. Within a multidisciplinary and multicultural framework that interrelates theory, research, and practical experience, the competency-based program integrates the goals and career aspirations of the graduate candidate with the current and future issues of dental hygiene, health care, and society. A major advantage of graduate study in dental hygiene is the Dental Hygiene Research Center which serves as a hub for independent investigations with other scholars and professionals both within and external to the University. Although graduate education focuses on developing a specialty, such specialization is viewed as secondary to extending dental hygiene knowledge and practice beyond present horizons and the importance of developing dental hygiene theory.

Students in the master's degree program with a major in dental hygiene are provided the opportunity to obtain skills to facilitate their assuming the roles of educator, researcher, and administrator. Through specialized skills training, graduates are prepared to assume leadership roles necessary for improving professional dental hygiene care and advancing dental hygiene knowledge and practice.

The program offers distinct specialty areas in which students may focus: education, administration/management, research, marketing and community health. Applicants are encouraged to contact the graduate program director to obtain additional information regarding the cognate offerings, practicum and externship opportunities, and requirements. Some courses can be taken in a distance education format.

Admission
To qualify for admission, the applicant must possess a certificate or associate degree from an accredited dental hygiene program and a baccalaureate degree in dental hygiene or a related field. The applicant must have an overall grade point average of at least 2.80 (on a 4.00 scale) in undergraduate education and a minimum of 3.00 in the dental hygiene major. The Dental Hygiene Board examination score, completed recommendation forms from a previous clinical supervisor and dental hygiene program director, two recommendations from academic sources, a formal written statement of personal goals and objectives, and official transcripts of all college work must also be submitted. Forms are available at www.odu.edu/dental.

Participation in a clinical self-assessment and placement evaluation is required after acceptance to determine whether the candidate must take clinical courses.

Applicants whose qualifications are slightly below required minimums will be considered for admission to provisional status and may be required to take additional course work. The master's degree program is available under the Southern Regional Education Board's Academic Common Market. Applicants who are legal residents of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Oklahoma, South Carolina, or Tennessee may enroll, if accepted, as Academic Common Market students at in-state tuition rates.

Requirements
To qualify for the Master of Science with a major in dental hygiene, the candidate must satisfactorily complete either the thesis or nontesis program option. Degree requirements include a minimum of 34 semester
hours (thesis option) or 37 semester hours (nonthesis option) distributed as follows:

**Core Requirements.** Candidates are required to fulfill a 22 credit hour core requirement to include DNTH 512 (may be required), 514, 515, 516, 668 (in specialty area), 694, 660, and CHP 640.

**Specialty Area.** Candidates must select one of the five specialty areas and complete the required nine credit hours satisfactorily. Each specialty area includes electives which must be related to the specialty area.

**Thesis Option.** Candidates are required to complete a minimum of six credit hours in DNTH 698 and 699 which entails thesis research and writing. This option is considered essential for students interested in developing research and investigative skills. A thesis based on original research is required. The student is encouraged to become familiar with possible research areas soon after admission. Upon satisfactory completion of DNTH 515, the student should contact the graduate program director to discuss the research proposal and the selection of the thesis committee. The student will be provided with a committee consisting of the thesis advisor and two other faculty members selected by the graduate program director and the student. Prior to beginning the research, the student will present a written proposal to the thesis committee for approval.

Candidates choosing the thesis option must satisfactorily complete the thesis at least four weeks prior to graduation with copies delivered to the thesis committee. An oral comprehensive examination (thesis defense) will be conducted by the student’s thesis committee during the last four weeks of the semester prior to graduation. The cost of this thesis is a student expense.

**Nonthesis Option.** The nonthesis option consists of a minimum of three credit hours in DNTH 602 and three credits of elective course work. This option is designed for students pursuing a less research-oriented program of study. A student in this program is required to complete an indepth term paper or execute a modest research project. Project proposals must be submitted and approved prior to initiation. An oral comprehensive examination will be given.

**Writing Proficiency.** Students who do not hold an undergraduate degree from Old Dominion University are required to participate in diagnostic writing exercises for evaluation by the staff of the Writing Center. Each student is responsible for making an appointment with the Writing Center to complete the diagnostic writing under controlled conditions. This exercise should be completed prior to, or early in, the first semester of graduate studies.

Students deemed deficient in writing skills, as determined by the diagnostic exercise, will be required to remedy their deficiency through the services of the Writing Center prior to the completion of 15 graduate credits. Students who fail to participate in the diagnostic writing exercise or to complete recommended developmental work through the Writing Center will not be allowed to register for subsequent semesters.

All faculty members in the school require written assignments, which will be evaluated on the basis of form as well as content. Instructors will require students to utilize the resources available through the Writing Center, according to need.

Graduate students and faculty should employ the current edition of the Publication Manual of the American Psychological Association as the standard reference texts for all written assignments submitted within the School of Dental Hygiene.

**MEDICAL LABORATORY AND RADIATION SCIENCES**

www.odu.edu/mlrs

C. Thomas Somma, Chair

The School of Medical Laboratory and Radiation Sciences offers a coordinated program of courses and clinical laboratory experiences leading to degrees of Bachelor of Science in Medical Technology and Bachelor of Science in Nuclear Medicine Technology. Students may also pursue a major in cytotechnology through the Bachelor of Science in Health Sciences. In addition, the school offers a minor in medical technology, a post-baccalaureate certificate in cytotechnology, and an accelerated, weekend program for medical laboratory technicians (MLT).

**Bachelor of Science in Medical Technology**

www.odu.edu/medtech

Faye E. Coleman, Program Director

The medical technologist/clinical laboratory scientist performs a vital role in the diagnosis and treatment of disease by performing clinical laboratory tests on patients’ blood, body fluids, and other specimens. This includes clinical tests within the areas of chemistry, microbiology, hematology, immunology/serology, urinalysis and immunohematology.

The program is nationally accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 8410 W. Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415, 773 714-8880. Satisfactory completion of the program entitles graduates to write national certification examinations.

**Admission**

Admission to the University does not constitute admission to the medical technology program. Students are admitted to the program after completion of two years of college study, which includes all prerequisite courses. The students then enter two years of a combined didactic and clinical phase congruent with the 2 + 2 concept. A grade of C (2.00) or better is required in all medical technology course work for continuance in the program. The program does not offer just the final clinical phase to transfer applicants from 3 + 1 programs. Applications to the program, including all materials, must be submitted no later than February 1 for consideration for admission the following fall. Exemptions may be appealed only through the program director. Prospective students who fail to meet the February 1 deadline for formal admission will usually be allowed to take on-campus medical technology courses on a space-available basis. Permission must be first granted by the program director in advance of registration.

**Requirements**

<table>
<thead>
<tr>
<th>LOWER DIVISION GENERAL EDUCATION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (STAT 130M required; MATH 102M)</td>
<td>3-6</td>
</tr>
<tr>
<td>required for BIOL 115N and CHEM 115N-116N)</td>
<td></td>
</tr>
<tr>
<td>Computer Skills (satisfied through major course requirements)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>11-12</td>
</tr>
<tr>
<td>(BIOL 115N, CHEM 115N-116N required)</td>
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</table>

<table>
<thead>
<tr>
<th>SOCIAL SCIENCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Departmental Requirements**

BIOL 250-251 Human Anatomy and Physiology I and II 8
CHEM 311-312 Organic Chemistry with Lab 5

Students must complete the following courses prior to entering the medical technology program: BIOL 115N, 250-251; CHEM 115N-116N, 311-312; and STAT 130M.

**Major Requirements**

**Third Year-Fall**

MEDT 210 Orientation to Med Technology/ Clinical Lab Science 1
MEDT 307 Clinical Methods in Microbiology 2
MEDT 308 Clinical Microbiology 3
MEDT 311 Hematology 3
MEDT 312 Hematology Lab 1
MEDT 324 Clinical Instrumentation and Electronics 3
MEDT 325 Clinical Instrumentation Methods 1
MEDT 330 Clinical Immunology/Serology 2
MEDT 331 Clinical Immunology/Serology Lab 1

**Third Year-Spring**

MEDT 309 Medical Bacteriology 3
MEDT 310 Urinalysis/Body Fluids 1
MEDT 313 Diagnostic Methods in Urinalysis 1
MEDT 319 Medical Bacteriology Methods 2
MEDT 326 Immunohematology 3
MEDT 336 Immunohematology Lab 1
MEDT 327 Hemostasis 1
MEDT 337 Advanced Hematology 1
MEDT 339 Parasitology, Mycology and Virology Lab 1
MEDT 340 Medical Parasitology, Mycology and Virology 1
MEDT 351 Clinical Biochemistry 3

Third Year-Summer
MEDT 320 Phlebotomy Methods 2
Clinic Practica 5 to 6 credits from spring courses

Fourth Year-Fall
MEDT 403W Management in the Clinical Setting 3
MEDT 440 Statistical Applications & Data Analysis in the Clinical Laboratory 3

Fourth Year Spring
MEDT 404 Clinical Hematology Practicum 4
MEDT 406 Clinical Microbiology Practicum 5
MEDT 452 Clinical Biochemistry Practicum 5
MEDT 454 Clinical Blood Bank Practicum 4
MEDT 457 Medical Technology Seminar 1
MEDT 458 Clinical Elective Practicum 1

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)
Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, minimum 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Science in Medical Technology—MLT to MT Weekend College Program

Angela Bell, Program Director
The B.S.M.T. Weekend Program is available for associate degree holders and former hospital or military program trainees. The curriculum is designed to meet the needs of local and distant practitioners. Program and University required courses are available on weekends and on TELETECHNET.

LOWER DIVISION GENERAL EDUCATION
Credits
Written Communication 6
Oral Communication (satisfied through major course requirements) 0-3
Mathematics (STAT 130M required; MATH 102M required for BIOL 115N and CHEM 115N-116N) 3-6
Foreign Language 0-6
Computer Skills (satisfied through major course requirements) 0-3
Fine and Performing Arts 3
History 3
Literature 3
Philosophy 3
Natural Science and Technology (BIOL 115N, CHEM 115N-116N required) 12
Social Science 3

Departmental Requirements
BIOL 250-251 Human Anatomy and Physiology I and II 8
CHEM 311-312 Organic Chemistry with Lab 5
Students must complete the following courses prior to entering the medical technology program: BIOL 115N, 250-251; CHEM 115N-116N, 311-312; and STAT 130M.

Major Requirements
Electives (including transfer and Experiential Learning Credit from MLT Training Program) 0-6
MEDT 309 Medical Bacteriology 3
MEDT 311 Hematology 3
MEDT 315 Clinical Laboratory Diagnosis 3
MEDT 324 Clinical Instrumentation and Electronics 3
MEDT 326 Immunohematology 3
MEDT 340 Medical Parasitology, Mycology and Virology 1
MEDT 351 Clinical Biochemistry 3
MEDT 403W Management in the Clinical Setting 3
MEDT 440 Statistical Application & Data Analysis in the Clinical Laboratory 3
MEDT 441 Clinical Hematology Competencies 1
MEDT 442 Clinical Microbiology Competencies 1
MEDT 443 Clinical Biochemistry Competencies 1
MEDT 444 Clinical Blood Bank Competencies 1
MEDT 445 Advanced Clinical Practicum 3
MEDT 457 Medical Technology Seminar 1

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.)
Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, minimum 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Bachelor of Science in Nuclear Medicine Technology

www.odu.edu/nmed

Scott R. Sechrist, Program Director
Nuclear medicine technology is the clinical specialty that utilizes radioactive materials for diagnostic, therapeutic and research purposes. Under the supervision of a physician, the nuclear medicine technologist performs both in vivo and in vitro procedures on patients. The responsibilities of nuclear medicine technologists are varied and include: preparing and administering radiopharmaceuticals; positioning patients for diagnostic imaging; performing quality control procedures on radiation detection instruments; collecting, preparing and analyzing biologic specimens for physician interpretation; and performing radiation safety surveys. Nuclear medicine technologists are generally employed in hospitals.

The nuclear medicine technology program is designed to prepare individuals as entry-level nuclear medicine technologists. Upon successful completion of the program, graduates are eligible to sit for a national exam for certification as a nuclear medicine technologist.

The program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. A grade of C (2.00) or better in all nuclear medicine course work is required to continue in the program.

Admission
All admission materials must be received by October 15. Interviews are then scheduled for early November.

Requirements

LOWER DIVISION GENERAL EDUCATION
Credits
Written Communication 6
Oral Communication (satisfied through major course requirements) 0-3
Mathematics (STAT 130M and MATH 102M required) 6
A variety of clinical facilities in the Hampton Roads area are utilized for additional training in screening techniques and diagnostic procedures. They are also trained in specimen preparatory techniques. Cytotechnologists are specially trained medical laboratory professionals who work with pathologists in detecting changes in cell samples from numerous body sites which is important in the early diagnosis of cancer. This is done primarily with the use of the microscope to evaluate slide preparation of cell samples for abnormalities in structure, indicating cancer, precancerous lesions, benign tumors, infectious agents and inflammatory processes. They are also trained in specimen preparatory techniques.

The program of study is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the American Society of Cytopathology.

Theory is reinforced through an integrated clinical phase which allows the student direct experience in a hospital or lab setting providing additional training in screening techniques and diagnostic procedures. Graduates are eligible to sit for national certifying ASCP exams.

Cytotechnology Track—Bachelor of Science in Health Sciences

www.odu.edu/cyto

Sophie K. Thompson, Program Director

The School of Medical Laboratory and Radiation Sciences offers a program in cytotechnology through the Bachelor of Science in Health Sciences. Cytotechnologists are specially trained medical laboratory professionals who work with pathologists in detecting changes in cell samples from numerous body sites which is important in the early diagnosis of cancer. This is done primarily with the use of the microscope to evaluate slide preparation of cell samples for abnormalities in structure, indicating cancer, precancerous lesions, benign tumors, infectious agents and inflammatory processes. They are also trained in specimen preparatory techniques.

The program of study is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the American Society of Cytopathology.

Theory is reinforced through an integrated clinical phase which allows the student direct experience in a hospital or lab setting providing additional training in screening techniques and diagnostic procedures. Graduates are eligible to sit for national certifying ASCP exams.

**Requirements**

**LOWER DIVISION GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication (ENGL 110C and 111C)</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (CHP 450)</td>
<td>0-3</td>
</tr>
<tr>
<td>Mathematics (MATH 102M)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>1-3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td>16</td>
</tr>
<tr>
<td>(BIOL 115N-116N, CHEM 115N-116N required)</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
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</tbody>
</table>

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 250-251 Human Anatomy and Physiology I and II</td>
<td>8</td>
</tr>
<tr>
<td>PHIL 345</td>
<td></td>
</tr>
</tbody>
</table>

Students must complete the following courses prior to entering the nuclear medicine technology program: BIOL 250-251; CHEM 101N-102N; PHYS 101N-102N; and MATH 102M and STAT 130M.

**THIRD YEAR**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>NMED 300 Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NMED 331 Concepts in Nuclear Medicine Technology</td>
<td>4</td>
</tr>
<tr>
<td>Spring</td>
<td>NMED 332 Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>NMED 335 Radiation Health</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NMED 401 Nuclear Medicine Technology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>NURS 393 Clinical Skills for Non-Nursing Majors</td>
<td>2</td>
</tr>
<tr>
<td>Summer</td>
<td>NMED 440 Clinical Nuclear Medicine Technology I</td>
<td>8</td>
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</table>

**FOURTH YEAR**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>NMED 450 Clinical Nuclear Medicine Technology II</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>NMED 402 Nuclear Medicine Technology II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>NMED 403 Radiopharmacy</td>
<td>3</td>
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<tr>
<td>Spring</td>
<td>NMED 460 Clinical Nuclear Medicine Technology III</td>
<td>9</td>
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<tr>
<td></td>
<td>NMED 410 Non-Imaging Nuclear Medicine Technology</td>
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<td></td>
<td>NMED 475W Administration and Management in Nuclear Medicine Technology</td>
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</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

A variety of clinical facilities in the Hampton Roads area are utilized for clinical education experiences. Students are responsible for providing their own transportation to these sites. Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Major Course Requirements**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>CYTO 428 Cytopreparatory Techniques and Processes</td>
<td>2</td>
</tr>
<tr>
<td>Second Semester</td>
<td>CYTO 403 Gynecological Screening Lab</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CYTO 404 General Pathology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CYTO 405 Normal Gynecological Cytology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CYTO 415 Abnormal Gynecological Cytology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CYTO 458 Cytology Internship I</td>
<td>4</td>
</tr>
<tr>
<td>Third Semester</td>
<td>CYTO 424 Respiratory Cytology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CYTO 442 Gastro-Intestinal Cytology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CYTO 444 Genitourinary Cytology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CYTO 445 Breast Cytology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CYTO 446 Body Fluids Cytology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CYTO 468 Cytology Internship II</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td>CYTO 448 Non-Epithelial Cytology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CYTO 455 Fine Needle Aspiration</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>CYTO 478 Cytology Internship III</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>CYTO 497 Cytology Senior Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

**UPPER DIVISION GENERAL EDUCATION**

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

**Certificate Option/Second Degree**

A certificate or second degree in cytotechnology is available to students who have a Bachelor of Science degree.

**NURSING**

www.odu.edu/nursson

Richardean S. Benjamin, Chair

The School of Nursing offers programs leading to the degrees of Bachelor of Science in Nursing and Master of Science in Nursing.
Bachelor of Science in Nursing

Kay Palmer, Undergraduate Program Director
Phyllis D. Barham, Chief Academic Advisor

Graduates of the baccalaureate program in professional nursing are generalists prepared to care for culturally diverse individuals and groups across the lifespan in a complex global community. Upon completion of the innovative, technology-enhanced program, graduates are knowledgeable about current trends in health care, assume responsibility for their professional growth, and are prepared for graduate study in nursing. The program is fully accredited by the Commission on Collegiate Nursing Education (CCNE) and approved by the Virginia State Board of Nursing.

The baccalaureate curriculum is designed to accommodate the needs of students desiring to become registered nurses (pre-licensure curriculum) and those who are already registered nurses holding hospital diplomas or associate degrees desiring to earn the B.S.N. degree (post-licensure). The pre-licensure curriculum is offered in a traditional 36-month (no summers) format and a 24-month accelerated year-round format. Most students enroll on a full-time basis. Upon satisfactory completion of the program, a graduate is eligible to take the National Council Licensing Examination for Registered Nurses (NCLEX-RN) for licensure as a registered nurse. The post-licensure curriculum is offered in both a full-time and part-time format, is a part of the TELETECHNET system and may be completed with courses offered on weekday evening times. Most students enroll on a part-time basis.

Admission

Applicants for admission to the undergraduate nursing major must initially apply and be accepted to the University and must complete prerequisite courses prior to being admitted to the School of Nursing. Transfer students may complete the prerequisite courses at another college or university but are responsible for having the Admissions Office determine that the courses are equivalent and acceptable to University requirements. In some cases, the admissions committee of the School of Nursing may require additional course work.

Students who wish to enter the nursing major must also submit a nursing application to the School of Nursing prior to February 1 in order to be considered for fall admission. An application to the nursing major may be obtained directly from the School of Nursing or from the School of Nursing website, www.odu.edu/nursing.

Admission to the School of Nursing is highly competitive and is based on a review of several criteria by the school’s Admissions, Continuance and Advanced Placement Committee. To be considered for admission a student must:

1. Apply and be admitted to the University as a degree-seeking undergraduate student.
2. Submit a School of Nursing application directly to the School of Nursing by February 1 with photocopies of all previous college transcripts attached.
3. Have a transfer of credit evaluation completed by the University Office of Admissions.
4. Registered nurse students must submit a photocopy of their license to practice as an RN.

Applicant review is based on the following criteria:

1. Admission to the University.
2. Successful completion of prerequisite courses with a grade of C or better.
3. College/university academic record(s).

Qualified high school students may apply to the University for admission with guaranteed entry into the Bachelor of Science in Nursing program. For criteria and additional information, please visit the University Web site or contact the Office of Admissions.

Continuance Policies

1. A grade of C (2.00) or better is required in all nursing courses to continue in the nursing program.
2. An average of 78% or better on objective tests within a nursing course is required to earn a grade of C (2.00). A student who earns an average less than 78% on objective tests for a nursing course is awarded a grade of D or F and will not be considered in good academic standing in the major.
3. A cumulative grade point average of 2.00 or better is required to continue in the nursing program.
4. A nursing student who fails a nursing course and is readmitted to the nursing program is allowed to repeat the failed course only once.
5. A student who leaves the major and is readmitted may be required to take additional course work prior to or concurrent with readmission.
6. A student may be readmitted to the nursing major only once.

Note: Policies and procedures are outlined in more detail in the School of Nursing Student Handbook (on the web). All students accepted into the nursing major are responsible for familiarizing themselves with this handbook upon entry into the major.

Honors Program for Nursing Majors

The School of Nursing has elected to offer departmental honors to interested and qualified students. The honors curriculum in the School of Nursing reflects the school’s commitment to scholarship, leadership, clinical practice and community service. Students who are interested in receiving a Bachelor of Science in Nursing degree with Honors will meet the following requirements:

1. A minimum GPA of 3.50.
2. An application to the Honors Committee.
3. Completion of two required departmental honors courses, Nursing 387 Nursing Science (pre- and post-licensure students) and Nursing 487W (pre-licensure students) or 486W Nursing Leadership (post-licensure students).
4. Completion of one capstone course, Nursing 489 (pre-licensure students) or 486 (post-licensure students) as an honors course. The student will design a project in addition to the usual course requirements that will support honors designation.

Traditional Curriculum for Pre-licensure Students

The guide for the traditional curriculum lists the minimal prerequisite courses in the freshman year which must be completed with a grade of C or better for eligibility for admission to the major: Chemistry 101N, Chemistry 102N, Biology 250, Biology 251, English 110C and Sociology 201S. The curriculum guide below illustrates a suggested course of study for the four-year program. The nursing major begins in the sophomore year; additional non-nursing general education and support courses are also indicated. Students must complete the entire curriculum of 120-126 credits (depending upon foreign language exemption) to meet degree requirements. Nursing courses are taken in the order listed. Specified nursing departmental requirement courses must be taken prior to the junior year in nursing.

FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
</tr>
<tr>
<td>* CHEM 101N College Chemistry I</td>
</tr>
<tr>
<td>* BIOL 250 Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>* ENGL 110C Composition I</td>
</tr>
<tr>
<td>ARTH 121A; ARTS 122A; DANC 185A; MUSC 264A; or THEA 241A</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>Spring</td>
</tr>
<tr>
<td>* CHEM 102N College Chemistry II</td>
</tr>
<tr>
<td>* BIOL 251 Anatomy &amp; Physiology II</td>
</tr>
<tr>
<td>* SOC 201S Introduction to Sociology</td>
</tr>
<tr>
<td>**ENGL 111C Composition II</td>
</tr>
<tr>
<td>14</td>
</tr>
</tbody>
</table>

*These courses are PREREQUISITES for the nursing major and must be completed before NURS 300. A grade of C or better is required in prerequisite courses.

SOPHOMORE YEAR/NURSING MAJOR

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
</tr>
<tr>
<td>**NURS 300 Introduction to Nursing Theories &amp; Concepts I</td>
</tr>
<tr>
<td>**NURS 302 Health Assessment Clinical Laboratory</td>
</tr>
<tr>
<td>**NURS 310 Therapeutic Diets I</td>
</tr>
<tr>
<td>**BIOL 103 Bacteriology</td>
</tr>
<tr>
<td>**STAT 130M Statistics (pre/co req for NURS 363)</td>
</tr>
<tr>
<td>**PSYC 203S Developmental Psychology</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>17</td>
</tr>
</tbody>
</table>

Note: Requirements that will support honors designation.

The student will design a project in addition to the usual course requirements that will support honors designation.

Graduates of the baccalaureate program in professional nursing are generalists prepared to care for culturally diverse individuals and groups across the lifespan in a complex global community. Upon completion of the innovative, technology-enhanced program, graduates are knowledgeable about current trends in health care, assume responsibility for their professional growth, and are prepared for graduate study in nursing. The program is fully accredited by the Commission on Collegiate Nursing Education (CCNE) and approved by the Virginia State Board of Nursing.
### Spring

**NURS 301 Introduction to Nursing Theories & Concepts II** 3

**NURS 303 Fundamentals of Nursing Practice** 2

**NURS 374 Nursing Process and Drug Therapy I** 2

**NURS 430 Nursing and the Gerontological Client** 2

HIST 101H, 102H, 103H, 104H or 105H 3

ENGL 112L or 144L 3

PHIL 110P, 120P, or 150P 3

**These courses must be completed prior to the Junior year**

### JUNIOR YEAR

#### Fall

NURS 320 Adult Health Nursing I 3

NURS 321 Clinical Management: Adult Health Nursing I 2

NURS 350 Psychiatric/Mental Health Nursing 3

NURS 351 Clinical Management of Psychiatric/Mental Health Problems 1

NURS 363 Nursing Science 3

Upper Division Elective Cluster Course 3

**Total Credits:** 15

#### Spring

NURS 311 Therapeutic Diets II 1

NURS 330 Nursing Care of the Childbearing Family 3

NURS 331 Clinical Management of the Childbearing Family 1

NURS 340 Adult Health Nursing II 3

NURS 341 Clinical Management: Adult Health Nursing II 2

NURS 375 Nursing Process and Drug Therapy II 2

Upper Division Elective Cluster Course 3

**Total Credits:** 15

#### SENIOR YEAR

#### Fall

NURS 312 Therapeutic Diets III 1

NURS 420 Nursing Care of Infants and Children 3

NURS 421 Clinical Management - Infants and Children 2

NURS 450 Adult Health Nursing III 3

NURS 451 Clinical Management: Adult Health Nursing III 2

NURS 470 Community Health Nursing I 2

**Total Credits:** 13

#### Spring

NURS 480W Leadership and Management 3

NURS 431 Transition to Professional Nursing Practice 3

NURS 440 Nursing Process in Rehabilitation 2

NURS 441 Clinical Management of Rehab Clients 2

NURS 471 Community Health Nursing II 2

NURS 395 Nursing Elective 2

**Total Credits:** 14

Please note: The University General Education requirement for six credits of foreign language must be met by any student not exempt from the requirement. The following exemptions exist for the foreign language requirement:

- a. High school graduate prior to December 31, 1985, or
- b. Three years of one foreign language in high school, or
- c. Two years in each of two different foreign languages in high school

Students may also meet the foreign language requirement by completion of a university-parallel associate degree.

The oral communication and social science general education requirements are met through the major.

### UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major.

Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-126 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

### Accelerated Curriculum for Pre-licensure Students

The guide for the accelerated curriculum lists the prerequisites, general education and departmental requirement courses supporting the major. It is suggested that in addition to completing the prerequisite courses, students applying to this curriculum should complete all of the non-nursing courses prior to beginning the major. Nursing courses are taught in fall, spring and summer semesters for two calendar years. Summer enrollment is required.

Students desiring to enroll in the accelerated program should have completed the following courses prior to beginning the nursing major:

- Biology 250 4 credits
- Biology 251+ 4 credits
- Chemistry 101N+ 4 credits
- Chemistry 102N+ 4 credits
- English 110C+ 3 credits
- English 111C 3 credits
- Foreign Language 1 Skills 3 credits
- Foreign Language 2 Skills 3 credits
- Psychology 203S 3 credits

* Must be completed with a grade of C or better

**Please note:** All transfer courses must be completed with a grade of C or better. (A grade of C- will not transfer to Old Dominion University.)

* (See the traditional curriculum for pre-licensure students or the General Education section of this Catalog for specific course numbers in Fine Arts, Philosophy, History, Literature and the possible exemption for foreign languages.)

### YEAR 1 Credits

#### FALL

NURS 300 Introduction to Nursing Theories and Concepts I 3

NURS 302 Health Assessment Clinical Lab 2

NURS 310 Therapeutic Diets I 1

NURS 430 Nursing and the Gerontological Client 2

Cluster II 3

**Total Credits:** 11

#### SPRING

NURS 311/312 Therapeutic Diets II & III 2

NURS 301 Introduction to Nursing Theories and Concepts II 3

NURS 303 Fundamentals of Nursing Practice 2

NURS 363 Nursing Science 3

NURS 374 Nursing Process and Drug Therapy I 2

Cluster II 3

**Total Credits:** 15

#### SUMMER

NURS 320 Adult Health Nursing I 3

NURS 321 Clinical Management: Adult Health Nursing I 2

NURS 350 Psychiatric/Mental Health Nursing 3

NURS 351 Clinical Management of Psychiatric/Mental Health Problems 1

NURS 375 Nursing Process and Drug Therapy II 2

**Total Credits:** 11

#### YEAR 2 Credits

#### FALL

NURS 330 Nursing Care of the Childbearing Family 3

NURS 331 Clinical Management of the Childbearing Family 1

NURS 340 Adult Health Nursing II 3

NURS 470 Community Health Nursing I 2

**Total Credits:** 11
NURS 401 Career Pathway: Assessment 3

Junior Fall Semester
NURS 401 Career Pathway: Assessment 3

Junior Spring Semester
NURS 402 Career Pathway: Development 3

Junior Summer Semester
NURS 492 Community Health Nursing 3

NURS 402 Nursing Care of Infants and Children 3
NURS 421 Clinical Management of Infants and Children 2
NURS 450 Adult Health Nursing III 3
NURS 451 Clinical Management: Adult Health Nursing III 2
NURS 471 Community Health Nursing II 2

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SUMMER
NURS 431 Transition to Professional Nursing Practice 3
NURS 440 Nursing Process in Rehabilitation 2
NURS 441 Clinical Management of Rehabilitation Clients 2
NURS 480W Leadership and Management 3
NURS 495 Topics 2

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**Students may satisfy the upper-division general education requirement with two cluster courses, a minor, or a previous bachelor's degree. The Administrative Leadership cluster choices are MGMT 325, MGMT 350 or 414, PSYC 303, COMM 351, and PHIL 303 or 345.**

Post-licensure Curriculum (for Registered Nurses)

The post-licensure curriculum is available on the main campus, at local higher education centers, and at many TELETECHNET sites. Please check with the School of Nursing for a complete listing of available sites. Courses are taught using a combination of one-way video, two-way audio television and video streaming using the Blackboard format.

Requirements for the post-licensure curriculum are listed below. ENGL 110C is required for admission. Priority for admission is given to students who have completed the additional 23 credit hours listed. The remaining 28-34 credit-hour requirements in non-nursing courses follow. It is recommended that students complete most of the lower-level requirements before beginning the nursing major. A part-time sequence of major courses is provided. Attendance in summer session is necessary. Students who have completed all lower-level requirements may attend full time with advisor approval. To meet degree requirements, students must complete the entire curriculum of 120-126 credits (depending upon foreign language exemption). Based upon prior learning and successful progression in the major, registered nurse students are granted 33 experiential learning credits in nursing.

Required for admission

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 110C English Composition</td>
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Priority for admission with completion of the following requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 101N College Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102N College Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 250 Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 251 Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 103 Bacteriology</td>
<td>4</td>
</tr>
<tr>
<td>SOC 201S Introduction to Sociology</td>
<td>3</td>
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</tbody>
</table>

Additional General Education and Departmental Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111C English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 130M Elementary Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language Skills</td>
<td>0-6</td>
</tr>
<tr>
<td>Fine and Performing Arts Perspective</td>
<td>3</td>
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<tr>
<td>History Perspective 3</td>
<td>3</td>
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<td>Literature Perspective</td>
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<td>Philosophy Perspective</td>
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<tr>
<td>PSYC 203S Developmental Psychology</td>
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</tr>
<tr>
<td>Elective</td>
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</tr>
<tr>
<td>Upper-division General Education (minimum credits for cluster listed)</td>
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</tr>
</tbody>
</table>

Junior Fall Semester
NURS 401 Career Pathway: Assessment 4

Junior Spring Semester
NURS 402 Career Pathway: Development 4

Junior Summer Semester
NURS 492 Community Health Nursing 3

NURS 495 Topics in Nursing 3

Senior Fall Semester
NURS 305 Health Assessment 3
NURS 306 Theoretical Foundation of Professional Nursing Practice 3

Senior Spring Semester
NURS 363 Nursing Science 3
NURS 490W Nursing Leadership 3

Senior Summer Semester
NURS 403 Career Pathway: Expanding Horizons 4
NURS 464 Developing Case Management Skills, Clinical Pathways and Outcome Research 3

Experiential Learning Credits
NURS 398 Clinical Nursing Concepts I 17
NURS 498 Clinical Nursing Concepts II 16

UPPER DIVISION GENERAL EDUCATION

Option A. Approved Minor, 12-24 hours; also second degree or second major. Option B. Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-126 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

Accelerated RN to BSN/MSN Curriculum

Students accepted into this accelerated curriculum may use 12 graduate credits to count toward both the B.S.N. and M.S.N. degrees. In the schedule above, students in the accelerated curriculum would take NURS 610 instead of NURS 306 in the Senior Fall Semester, and NURS 611 instead of NURS 363 and NURS 620 in lieu of NURS 490W (Nurse Leader Role only) in the Senior Spring Semester. NURS 640 would be taken in the Senior Summer Semester instead of NURS 495 in the Junior Summer Semester. Requirements for the accelerated curriculum are listed below.

Students desiring to enroll in the accelerated RN to B.S.N. curriculum must:
1. Complete all lower-division general education/departmental requirements prior to the start of the first graduate-level course.
2. Pass the Exit Examination of Writing Proficiency prior to the start of the first graduate-level course.
3. Complete and submit an Old Dominion University Graduate School Application and supplemental nursing application for the M.S.N. program by May 15 for a decision by July 1.
4. Provide evidence of testing scores by May 15 for decision by July 1 of:
   A. Miller Analogues Test (MAT) score of 45 or above; or
   B. Graduate Record Examination (GRE) combined verbal and quantitative portion score of 1000 or above (or 1500 total on all three sections).
5. Present an Old Dominion University nursing grade point average of 3.50 or above.
6. Present a cumulative and transfer grade point average of 2.8 or above.

To continue in the accelerated RN to B.S.N./M.S.N. curriculum, a student must earn a grade of B or above in each graduate-level course.

1. A student in the accelerated RN to B.S.N./M.S.N. curriculum who earns a grade of B- or C+ in a graduate course will not be able to continue in the M.S.N. curriculum as an undergraduate student, but will be allowed to count that graduate course toward the B.S.N. degree requirements.
2. A student in the accelerated RN to B.S.N./M.S.N. curriculum who earns a grade of C or below in a graduate course will not be allowed to continue in the M.S.N. curriculum as an undergraduate student, and will be required to take the corresponding undergraduate course to complete the B.S.N. degree requirements.

Students not admitted to the accelerated RN to B.S.N./M.S.N. curriculum may apply to the M.S.N. program upon completion of the B.S.N. degree. A student who was ineligible to continue in the accelerated RN to B.S.N./M.S.N. curriculum may reapply for admission to graduate study upon completion of the B.S.N. degree.
Nursing Transfer Courses

Students attempting to transfer nursing courses from a nationally accredited B.S.N. program to Old Dominion University must submit photocopies of their nursing course syllabi for review prior to receiving advanced placement/transfer credit in the B.S.N. curriculum. The course syllabi are reviewed by nursing faculty to determine equivalency to courses in the Old Dominion University curriculum.

General Policies: Physical Exam / CPR / Liability Insurance

1. All students are required to have an initial physical exam completed and submitted by the first week of courses in the major.
2. Returning students (second year, third year) must have an annual PPD completed and submitted by the first week of courses in the fall semester.
3. All students must provide written documentation of Cardio-Pulmonary Resuscitation certification (professional level course) each year by the first week of courses in the semester.
4. Professional liability insurance is required for all clinical courses. The University covers this requirement for students enrolled in required clinical courses for the activities associated with those courses.
5. Due to the intimate nature of nursing practice with vulnerable populations, criminal background/sex offender status checks are required of all pre-licensure students.

Computer Competency Requirements

Faculty have identified the following basic computer skills as imperative for students in the B.S.N. program.
1. Locate a file on: hard drive, disk, and server if appropriate
2. Save a file on a specific drive and folder
3. Change drives
4. Connect to an ISP
5. Navigate between two or more applications without closing and reopening (multi-tasking)
6. Open a new file
7. Open an existing file
8. Save a file
9. Rename a file (save as)
10. Cut text
11. Paste text
12. Format text
13. Change line spacing
14. Download and upload e-mail attachment files

Technical Standards

Students admitted to the undergraduate nursing program are expected to complete all program requirements. Any student who thinks he or she does not possess one or more of the following skills should seek assistance from an academic counselor, faculty advisor and Disability Services concerning any flexibility in program requirements and possible accommodation through technical aids and assistance. Students are expected to:
1. Assimilate knowledge acquired through lectures, discussions, demonstrations and readings and make appropriate judgments/decisions in a timely manner during clinical practice.
2. Comprehend and apply basic mathematical skills, e.g. ratio and proportion concepts, use of conversion tables, calculation of drug dosages.
3. Demonstrate competence in concepts from biological, sociological and psychological sciences.
4. Communicate effectively (verbally and non-verbally) and prepare written documents that are correct in style, grammar and mechanics.
5. Read charts, records, scales, fine print, handwritten notations and distinguish colors.
6. Distinguish tonal differences and use phones.
7. Distinguish odors.
8. Distinguish changes in sensation, e.g. pulses, temperature, texture.
9. Manipulate equipment necessary for providing nursing care to clients, e.g. syringes, infusion pumps, life support devices.
10. Perform one-rescuer/two-rescuer cardiopulmonary resuscitation (CPR) on adults, children and infants without any limitation to space or environment.
11. Complete baths
12. Establish interpersonal rapport with individuals, families and community groups who have a wide range of social, emotional intellectual and cultural differences.

Nursing Practice/Performance Expectations

The curriculum for the B.S.N. program includes 66 credits in the nursing major and provides classroom instruction, laboratory and clinical practice experience for students. This comprehensive program includes experiences in a variety of nursing specialties (critical care, obstetrics, pediatrics, adult health, community, rehabilitation and psychiatric nursing) giving the graduate a broad-based foundation in nursing practice. Graduates are not specialists, but generalists prepared for entry-level practice in these areas of nursing practice.

Students in the B.S.N. program are expected to provide total, intimate personal care to both male and female clients of all ages, ethnic and racial backgrounds. These activities may include, but are not limited to:
1. Complete baths
2. Urinary catheterizations
3. Colonic enemas
4. Vaginal douches
5. Perineal care
6. Breast exams
7. Testicular exams
8. Providing nutrition (feeding) with all types of diets

Students are expected to interact in a professional, non-judgmental manner with clients, classmates, faculty and other health team members of all ethnic, religious and national backgrounds. No exceptions for cultural differences will be made for any student.

Master of Science in Nursing

Laurel S. Garzon, Graduate Program Director

The program leading to the Master of Science in Nursing is designed to prepare graduates with expertise in theory, research, and advanced nursing practice. Through academic courses and clinical experiences, graduate students are prepared to meet the present nationwide demand for nurses in advanced practice as well as to pursue doctoral study. The master's program in nursing is fully accredited by the Commission on Collegiate Nursing Education and approved by the Virginia Board of Nursing.

Students in the program may specialize in a variety of roles. All specialties emphasize development of the nursing role through advanced theory and research. The program strives to invest its graduates with leadership responsibility, professional commitment, and a holistic approach to health and nursing care.

The number of credits required for the Master of Science in Nursing degree varies and reflects the number of hours in the core plus the hours required for certification in a specialty. The nurse anesthesia role option requires 83 credit hours to complete. The advanced maternal-child nursing role prepares the clinical specialist or educator and is 56 credit hours. Nurse practitioner role options include pediatric nurse practitioner (45 credit hours), family nurse practitioner (47 credit hours) and women's health nurse practitioner (45 credit hours). The nurse leader and nurse educator programs are each 36 credit hours. The nurse midwifery program is 36 credit hours.

Programs are available for certified advanced practice nurses in anesthesia (CRNA) and nurse practitioners to obtain the M.S.N. Post-master's programs for M.S.N.-prepared nurses to obtain nurse practitioner and nurse anesthesia preparation are also available.

Admission to the Graduate Program

In addition to meeting University and college requirements, applicants must have:
1. Completed a baccalaureate degree with an upper-division major in nursing from a National League for Nursing accredited college or university program, a Commission on Collegiate Nursing Education accredited college or university program or the equivalent.
2. Demonstrated graduate potential by satisfactory scholastic achievement in the baccalaureate nursing program (grade point average of 2.80 overall and 3.00 in the major on a 4.00 scale).
3. Completed an undergraduate course in statistics.
4. Completed a health assessment component (undergraduate or continuing education).
5. Attained a satisfactory score on the Miller Analogies Test (MAT) or the Graduate Record Examination (GRE), taken within the past five years.
6. A current license as a registered nurse.
7. At least one year of recent clinical nursing experience. Applicants for the nurse anesthesia role must have at least one year of clinical experience in critical care nursing.
8. Presented three letters of professional reference, including one from the dean or a member of the nursing faculty in the baccalaureate program in nursing and one from the most recent employer.
9. Completed the Supplementary Application for Admission to the Master of Science in Nursing Program, including the short essay (500 to 700 words) describing professional and academic goals, and how graduate study in nursing will contribute to the fulfillment of these goals.
10. An interview is strongly advised for prospective students.
11. Students applying to the nurse anesthesia program should contact the director of the nurse anesthesia program at (757) 683-5068. For full consideration, applications for the nurse anesthesia program must be submitted by December 1 of the year prior to the August starting date.
12. Students applying to the post-master’s program must have a master's degree in nursing.

Requirements

In addition to general University requirements, the following apply to candidates for the Master of Science in Nursing degree:

1. Only degree-seeking students may pursue courses other than the core courses (NURS 610, 611, 640 and 613), except with written permission of the graduate program director.
2. Full-time or part-time study is available for most roles. Part-time students are required to complete all program requirements within a six-year period. Some roles have only part-time or full-time programs. Contact the graduate office regarding study options for each program at (757) 683-4298.
3. A written comprehensive examination covering the program of study is required by the final semester of study for students not electing to complete a thesis. A comprehensive examination in the role specialty is required for all postmaster’s students. A student must be registered in the semester the comprehensive exam is taken.
4. The student must make arrangements three months in advance to take a nursing course with a laboratory or practicum component to assure appropriate and available placement for the learning experience. Arrangements are made through the role coordinator.
5. The B grade (3.00) is the minimal acceptable grade for all courses with a NURS or NURA prefix for continuation in the master's program. Satisfactory performance in the laboratory or practicum component of a nursing course is required. Students achieving less than a B grade (3.00) in a nursing course may request an opportunity from the graduate program director to repeat the course once. Two course failures will result in termination from the nursing program. Students may not progress with an incomplete in prerequisite courses as listed in the curriculum plan.
6. See the General Policies section of the Nursing Student Handbook for requirements concerning physical exams, CPR certification, immunization requirements, professional liability insurance, computer competencies and technical standards for the School of Nursing.
7. Graduate nursing policies are available in the Nursing Student Handbook and on the School of Nursing web page.

Master of Science in Nursing—Nurse Leader

Mona Ternus, Coordinator

The nurse leader role prepares the graduate for leadership positions in an integrated delivery system. The curriculum is designed to provide the graduate student with knowledge and advanced problem-solving skills to address community and organizational issues. New models of health care delivery and the role of the advanced practice nurse in assuring effective organizations and healthy communities are analyzed.

Specialty courses focus on leadership skills in communities and organizations, needs assessments, group and organizational strategies, program development and health care evaluation. For the clinical practica, students may investigate a variety of health problems or care delivery issues in either acute care or community-based settings.

NURSE LEADER

FULL-TIME CURRICULUM

FIRST SEMESTER (Fall)  Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NURS 610</td>
<td>Theoretical Foundations for Nursing Practice</td>
<td>3</td>
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<tr>
<td>NURS 616</td>
<td>Organizational Leadership: Transformational Strategies in Focus Area</td>
<td>2</td>
</tr>
<tr>
<td>NURS 620</td>
<td>Professional Relationships &amp; Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>NURS 735</td>
<td>Organizational Leadership</td>
<td>3</td>
</tr>
<tr>
<td>NURS 740</td>
<td>Strategic Leadership</td>
<td>3</td>
</tr>
<tr>
<td>*Two Electives</td>
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THIRD SEMESTER (Summer)

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<tr>
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<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>NURS 611</td>
<td>Research Design</td>
<td>3</td>
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<tr>
<td>NURS 617</td>
<td>Strategic Leadership: Transformational Strategies in Focus Area</td>
<td>2</td>
</tr>
<tr>
<td>NURS 745</td>
<td>Visionary Leadership</td>
<td>3</td>
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</tbody>
</table>

TOTAL CREDITS FOR PROGRAM 36

* ELECTIVE Courses: Choose two of the following three-credit courses for Spring Semester

NURS 732 Nursing Informatics
NURS 730 Epidemiology
NURS 778 Financial Issues in Nursing Administration

Master of Science in Nursing—Nurse Anesthesia Specialty

Michael Jackson, Program Director

The Master of Science in Nursing program in nurse anesthesia is an 83-credit, 28-month program beginning in late August. During the first year, the program is designed to introduce students to the basic theoretical knowledge and skills necessary for advanced nursing practice in nurse anesthesia. The first 12 months of the program are primarily didactic. The last 16 months of the program are the clinical component comprised of both general and regional anesthesia techniques for surgery and clinical specialties such as ENT, neurosurgery, vascular surgery, open heart, obstetrics, trauma, and organ transplants. During this phase of the program, the student returns to the classroom on a weekly basis for extensive clinically related study.

Upon successful completion of the 28-month program, the graduate receives the M.S.N. degree and becomes eligible to write the National Certifying Examination for Nurse Anesthetists given by the Council on Certification of Nurse Anesthetists. Graduates successfully completing this exam become Certified Registered Nurse Anesthetists (CRNAs).

Degree-seeking status and admission to the M.S.N.-nurse anesthesia track are required prior to enrollment in the first-year, first-semester courses. Successful completion of courses in the previous semester is a prerequisite for enrollment in the next semester. All courses within a semester are corequisites and must be taken together.

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Note: The text provided is a sample representation and may not reflect the complete or accurate content of the original document.
### Nurse Anesthesia Full-Time Curriculum

**First Year First Semester**
- NURS 610: Theoretical Foundations for Nursing Practice 3
- NURS 646: Structure & Function for Advanced Nursing Practice I 3
- NURS 660: Pharmacotherapeutics for Nurse Anesthesia 3
- NURS 650: Medical Physical Sciences 3
- NURS 654: Professional Aspects of Anesthesia 3

**First Year Second Semester**
- NURS 611: Research Design 3
- NURS 647: Structure & Function for Advanced Nursing Practice II 3
- NURS 651: Pharmacology of Anesthesia Drugs 4
- NURS 652: Principles of Anesthesia Practice I 4

**First Year Third Semester**
- NURA 694: Advanced Physical Assessment 3
- NURS 640: Research Methods 3
- NURA 653: Principles of Anesthesia Practice II 2
- NURA 754: Anesthesia Practicum—Orientation to the Operating Room 4
- NURS 648: Disease Processes for Advanced Practice 2

**Second Year First Semester**
- NURA 655: Principles of Anesthesia Practice III 4
- NURA 755: Clinical Practicum A 10

**Second Year Second Semester**
- NURA 756: Clinical Practicum B 10

**Second Year Third Semester**
- NURA 757: Clinical Practicum C 10

**Third Year First Semester**
- NURA 758: Clinical Practicum D 10

**Total Credits for Program** 83

### Master of Science in Nursing—Certified Registered Nurse Anesthetists (CRNAs) to M.S.N. Program

Michael Jackson, Program Director

The Master of Science in Nursing program for Certified Registered Nurse Anesthetists (CRNAs) is a 30-credit degree program beginning yearly in August. The curriculum consists of nine credits of core nursing courses; nine credits of nursing elective courses; and 12 hours of Advanced CRNA clinical courses. Applicants for the CRNA/M.S.N. track must submit a professional portfolio and academic credentials for review prior to admission to the M.S.N. program. If there are deficiencies in preparation at the bachelor's level, courses from the R.N./B.S.N. program may be required.

### Certified Registered Nurse Anesthetist Full-Time Curriculum

**First Year First Semester**
- NURS 610: Theoretical Foundations for Nursing Practice 3
- NURS __: Graduate Nursing Elective 2

**First Year Second Semester**
- NURS 611: Research Design 3
- NURS __: Graduate Nursing Elective 2

### Second Year First Semester
- NURA 759: Clinical Practicum 12

**Total Credits for Program** 30

### Master of Science in Nursing—Advanced Maternal Child Program

Laurel Garzon, Coordinator

The advanced maternal-child nursing role prepares the graduate to plan, direct and provide advanced maternal-child care as a clinical specialist or educator in a variety of settings. Course work includes content, seminars and clinical practice in childbearing, the pediatric care, and women’s health.

### Advanced Maternal-Child Nursing Full-Time Curriculum

**First Year First Semester**
- NURS 610: Theoretical Foundations for Nursing Practice 3
- NURS 670: Advanced Pathophysiology 3
- NURS 661: Pharmacotherapeutics for Primary Health Care Providers 3
- NURS 686: Synthesis of Advanced Practice Concepts in Adolescent Focus 3

**First Year Second Semester**
- NURS 611: Research Design 3
- NURS 663: Health Promotion and Maintenance 2
- NURS 674: Advanced MCH Nursing Practice II 2
- NURS 664: Primary Care for Women 3

**First Year Third Semester**
- NURS 640: Research Methods 3
- NURS 724: Management of Chronic Problems and Illnesses 3
- NURS 787: Advanced Perinatal Nursing 3
- NURS 613: Issues in Advanced Nursing Practice 3
- NURS 675: Advanced MCH Nursing Practice III 2

**Total Credits for Program** 36

### Master of Science in Nursing—Nurse Educator Program

Karen Karlowicz, Coordinator

This innovative program is designed to address the nursing shortage by increasing the number of nurse educators available to meet the workforce training and educational needs. The program recruits, educates, and mentors nurses to teach in LPN, associate, diploma, and baccalaureate nursing education programs. The 36-hour curriculum combines the required M.S.N. core content on nursing theory, research and practice issues with courses on teaching methods, technology in education, evaluation methods, incorporating diversity into the education process, strategies for student and faculty success, and mentors teaching experiences. The program will be offered using a variety of distance learning strategies including televised courses, web-based instruction, video evaluation of teaching, and mentoried internships.
NURS 732 Nursing Informatics (web) or NURS 740 Strategic Leadership (web) 3
NURS 663 Health Promotion and Maintenance 2
NURS 662 Advanced Family Nursing I: Management of Acute Illnesses 3
NURS 664 Primary Care for Women 3
NURS 665 Advanced Family Nursing I Practicum 2
NURS 672 Advanced Family Nursing I: Management of Acute Illnesses 3
NURS 670 Advanced Physical Assessment 1
NURS 671 Advanced Physical Assessment Lab 1
NURS 714 Family/Community Focused Primary Care 1
NURS 661 Pharmacotherapeutics for Primary Health Care Providers 3

TOTAL CREDITS FOR PROGRAM 47

FAMILY NURSE PRACTITIONER (FNP) PART-TIME CURRICULUM

Students must complete the courses in the order prescribed in this plan. Degree-seeking status is a prerequisite of all courses except NURS 610, 611 and 640. Prerequisite for each semester is successful completion of the previous semester courses.

FIRST YEAR FIRST SEMESTER
NURS 610 Theoretical Foundations for Nursing Practice 3
NURS 714 Family/Community Focused Primary Care 1

FIRST YEAR SECOND SEMESTER
NURS 611 Research Design 3
NURS 663 Health Promotion and Maintenance 2
NURS 664 Primary Care for Women 3
NURS 665 Advanced Family Nursing I Practicum 2
NURS 762 Advanced Family Nursing I: Management of Acute Illnesses 3

FIRST YEAR THIRD SEMESTER
NURS 640 Research Methods 3
NURS 764 Advanced Family Nursing II Practicum 4
NURS 613 Issues in Advanced Nursing Practice 3
NURS 705 Primary Care Approaches for Children 3

SECOND YEAR FIRST SEMESTER
NURS 767 Advanced Family Nursing III Practicum 5
NURS 765 Advanced Family Nursing II: Management of Chronic Illnesses 3
NURS 768 Nursing Seminar in Complex Health Problems 1

TOTAL CREDITS FOR PROGRAM 47

Master of Science in Nursing—Family Nurse Practitioner Role

Micah Scott, Coordinator

The family nurse practitioner (FNP) role prepares graduate students to provide a full range of primary care services to individuals and families throughout the life span. In collaboration with other health care professionals, graduate students provide health promotion, health maintenance and restorative care to well, at-risk, and chronically ill clients and their families. Student clinical experiences are provided in a variety of primary care settings. Successful completion of the program qualifies students to register for the AANP or ANCC examination for certification as a family nurse practitioner.

Prerequisite for all courses except NURS 610, 611 and 640 is admission to the MSN-FNP program. No FNP course may be taken unless admitted to the FNP program. Unless specifically stated, all courses in the previous semester must be completed before taking courses in the subsequent semesters unless admitted to the part-time curriculum. Course work may be completed according to the full-time or part-time curriculum in the Hampton Roads region. The distance FNP program is available as a part-time or full-time program with admission every year.
<table>
<thead>
<tr>
<th>SECOND YEAR SECOND SEMESTER</th>
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<tbody>
<tr>
<td>NURS 644 Primary Care for Women</td>
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<tr>
<td>NURS 665 Advanced Family Nursing I Practicum</td>
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<td>NURS 762 Advanced Family Nursing I: Management of Acute Illnesses</td>
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<tr>
<th>SECOND YEAR THIRD SEMESTER</th>
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<tbody>
<tr>
<td>NURS 705 Primary Care Approaches for Children</td>
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<tr>
<td>NURS 764 Advanced Family Nursing II Practicum</td>
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<table>
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<tr>
<th>THIRD YEAR FIRST SEMESTER</th>
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<tbody>
<tr>
<td>NURS 768 Nursing Seminar in Complex Health Problems</td>
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<tr>
<td>NURS 765 Advanced Family Nursing II: Management of Chronic Illnesses</td>
</tr>
<tr>
<td>NURS 767 Advanced Family Nursing III Practicum</td>
</tr>
</tbody>
</table>

TOTAL CREDITS FOR PROGRAM 47

Master of Science in Nursing—Pediatric Nurse Practitioner Role

Laurel Garzon, Coordinator

The pediatric nurse practitioner (PNP) role prepares graduate students to provide a broad range of primary health care services to infants, children, adolescents and their families. In collaboration with the pediatrician and other health care professionals, students will be able to provide comprehensive services which include care of children with acute or chronic problems or minor trauma; counseling on normal growth and development, family and cultural issues, nutrition, safety, and behavioral problems; and well child assessments and screenings for health maintenance and promotion. Student practicum experiences are provided in a variety of primary care settings. The graduate may take the certification examination from the Pediatric Nurse Practitioner Certification Board or the American Nurses Certification Corporation.

Admission to the MSN-PNP program is prerequisite for all courses except NURS 610, 611 and 640. All courses in the previous semester must be completed, according to the full-time or part-time curriculum plan, prior to entry in subsequent semester courses.

PEDiatric nurse pracTitioner FULL-TIME CURRiculum

<table>
<thead>
<tr>
<th>FIRST YEAR FIRST SEMESTER (Fall)</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>NURS 610 Theoretical Foundations of Nursing</td>
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<tr>
<td>NURS 661 Pharmacotherapeutics for Primary Health Care Providers</td>
<td>3</td>
</tr>
<tr>
<td>NURS 670 Advanced Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>NURS 671 Advanced Physical Assessment</td>
<td>1</td>
</tr>
<tr>
<td>NURS 672 Advanced Physical Assessment Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>NURS 714 Family Focused Primary Care</td>
<td>1</td>
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<tr>
<th>FIRST YEAR SECOND SEMESTER (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 611 Research Design</td>
</tr>
<tr>
<td>NURS 662 Advanced MCH Nursing I: Common Health Problems and Health Promotion in Children</td>
</tr>
<tr>
<td>NURS 663 Health Promotion and Maintenance</td>
</tr>
<tr>
<td>NURS 664 Primary Care for Women</td>
</tr>
<tr>
<td>NURS 674 Advanced MCH Nursing Practice II</td>
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<table>
<thead>
<tr>
<th>FIRST YEAR THIRD SEMESTER (Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 613 Issues in Advanced Nursing Practice</td>
</tr>
<tr>
<td>NURS 640 Research Methods</td>
</tr>
<tr>
<td>NURS 675 Advanced Maternal Child Nursing Practice III</td>
</tr>
<tr>
<td>NURS 724 Chronic Health Problems and Illnesses</td>
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<table>
<thead>
<tr>
<th>SECOND YEAR FIRST SEMESTER (Fall)</th>
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<tbody>
<tr>
<td>NURS 619 Advanced Nursing Practice IV</td>
</tr>
<tr>
<td>NURS 686 Synthesis of Advanced Practice Concepts in Adolescent Focus</td>
</tr>
</tbody>
</table>

TOTAL CREDITS FOR PROGRAM 45

Master of Science in Nursing—Women’s Health Nurse Practitioner Role

Cindy Little, Coordinator

The women’s health nurse practitioner (WHNP) track in the graduate nursing program is designed to provide students with education and experience to become primary care providers in women’s health. Graduates are qualified to take the Women’s Health Nurse Practitioner certification examination offered by the National Certification Corporation. Students participate in a variety of women’s health practice experiences with preceptors and are required to complete clinical practice in primary adult health. Prerequisite to all courses except NURS 610, 611 and 640 is admission to the MSN-WHNP program. All courses in the previous semester must be completed, according to the full-time or part-time curricula, prior to entry in subsequent semester courses.

WOMEN’S HEALTH NURSE PRACTITIONER FULL-TIME CURRiculum

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<thead>
<tr>
<th>FIRST YEAR FIRST SEMESTER (Fall)</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>NURS 610 Theoretical Foundations for Nursing Practice</td>
<td>3</td>
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<tr>
<td>NURS 670 Advanced Pathophysiology</td>
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<td>NURS 671 Advanced Physical Assessment</td>
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<tr>
<td>NURS 672 Advanced Physical Assessment Laboratory</td>
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<td>NURS 714 Family/Community Focused Primary Care</td>
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<td>NURS 661 Pharmacotherapeutics for Primary Health Care Providers</td>
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<table>
<thead>
<tr>
<th>FIRST YEAR SECOND SEMESTER (Spring)</th>
</tr>
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<tbody>
<tr>
<td>NURS 611 Research Design</td>
</tr>
<tr>
<td>NURS 662 Health Promotion and Maintenance</td>
</tr>
<tr>
<td>NURS 663 Primary Care for Women</td>
</tr>
<tr>
<td>NURS 658 Advanced Nursing Practice in Women’s Health I</td>
</tr>
<tr>
<td>NURS 762 Advanced Family Nursing I: Management Of Acute Illness</td>
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<table>
<thead>
<tr>
<th>FIRST YEAR THIRD SEMESTER (Summer)</th>
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<tbody>
<tr>
<td>NURS 640 Research Methods</td>
</tr>
<tr>
<td>NURS 675 Advanced Perinatal Nursing</td>
</tr>
<tr>
<td>NURS 659 Advanced Nursing Practice in Women’s Health II</td>
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<tr>
<td>NURS 613 Issues in Advanced Nursing Practice</td>
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<table>
<thead>
<tr>
<th>SECOND YEAR FIRST SEMESTER (Fall)</th>
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<tbody>
<tr>
<td>NURS 660 Advanced Nursing Practice in Women’s Health III</td>
</tr>
<tr>
<td>NURS 686 Synthesis of Advanced Practice Concepts in Adolescent Focus</td>
</tr>
</tbody>
</table>

TOTAL CREDITS FOR PROGRAM 45

Master of Science in Nursing- Nurse Midwifery

Cindy Little, Coordinator

The nurse midwifery role prepares the graduate to provide reproductive care to women of all ages. This program is a partnership between...
Old Dominion University and Shenandoah University in Winchester, Virginia. The first year of courses is completed at one of ten Hampton Roads or TELETECHNET community college sites in Virginia. The final year is completed with Shenandoah University with course work arranged in blocks and clinicals in the home site of the student. This arrangement minimizes travel time to campus. The graduate is eligible to be certified by the American College of Nurse Midwives.

**FIRST YEAR FIRST SEMESTER (Fall, ODU)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>NURS 610</td>
<td>Theoretical Foundations for Nursing Practice</td>
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<tr>
<td>NURS 661</td>
<td>Pharmacotherapeutics for Primary Health Care Providers</td>
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</tr>
<tr>
<td>NURS 670</td>
<td>Advanced Pathophysiology</td>
<td>3</td>
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<td>NURS 671</td>
<td>Advanced Physical Assessment</td>
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<td>NURS 672</td>
<td>Advanced Physical Assessment Laboratory</td>
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<tr>
<td>NURS 714</td>
<td>Family &amp; Community Focused Primary Care</td>
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**FIRST YEAR SECOND SEMESTER (Spring, ODU)**

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<td>NURS 611</td>
<td>Research Design</td>
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</tr>
<tr>
<td>NURS 663</td>
<td>Health Promotion and Maintenance</td>
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<td>NURS 664</td>
<td>Primary Care for Women</td>
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</tr>
<tr>
<td>NURS 658</td>
<td>Advanced Nursing Practice in Women's Health I</td>
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**FIRST YEAR THIRD SEMESTER (Summer, ODU)**

<table>
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<tr>
<td>NURS 613</td>
<td>Issues in Advanced Nursing Practice</td>
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<tr>
<td>NURS 640</td>
<td>Research Methods</td>
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**SECOND YEAR FIRST SEMESTER (Fall, SHENANDOAH)**

<table>
<thead>
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<th>Course Title</th>
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<tr>
<td>NM 610</td>
<td>Primary Care of Women</td>
<td>3</td>
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<tr>
<td>NM 620</td>
<td>Comprehensive Antepartal Care</td>
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**SECOND YEAR SECOND SEMESTER (Spring, SHENANDOAH)**

<table>
<thead>
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<tr>
<td>NM 630</td>
<td>Midwifery Practicum</td>
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<td>NM 640</td>
<td>Comprehensive Perinatal Care</td>
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**SECOND YEAR THIRD SEMESTER (Summer, SHENANDOAH)**

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<td>NM 650</td>
<td>Integrated Midwifery Practicum</td>
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<tr>
<td>NM 660</td>
<td>Advanced Nurse-Midwifery Role Development</td>
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</table>

**TOTAL CREDITS FOR PROGRAM**

30

**Master of Science in Nursing—Certified Nurse Practitioner to M.S.N. Program**

Laurel S. Garzon, Coordinator

This program is designed to offer the Certified Nurse Practitioner an opportunity to complete the M.S.N. with content applicable to organizational, business, research, outcome assessment, informatics, and community health dimensions of advanced practice. The program requires completion of a nine-credit M.S.N. core curriculum, 15 credits of required graduate nursing courses and six credits of electives.

**FIRST YEAR FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NURS 610</td>
<td>Theoretical Foundations for Nursing Practice</td>
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<tr>
<td>NURS 686</td>
<td>Synthesis of Advanced Practice Concepts in Adolescent Focus</td>
<td>3</td>
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<tr>
<td>NURS 735</td>
<td>Organizational Leadership</td>
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**FIRST YEAR SECOND SEMESTER**

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<td>NURS 745</td>
<td>Visionary Leadership</td>
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<tr>
<td>NURS 613</td>
<td>Issues in Advanced Nursing Practice</td>
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**FIRST YEAR THIRD SEMESTER**

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<th>Course Title</th>
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<tr>
<td>NURS 640</td>
<td>Research Methods</td>
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</tr>
<tr>
<td>NM 640</td>
<td>Professional Relationships and Human Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS FOR PROGRAM**

47

**Post-Master’s Certificate Program**

This program of study is designed to provide Master of Science in Nursing prepared registered nurses with the knowledge and skills needed to register for an examination to certify as a family nurse practitioner, pediatric nurse practitioner, nurse anesthetist and women’s health practitioner. Individual programs of study are developed based upon the applicant’s previous experience and education.

**Specialty Certifications**

Specialty certifications are available for certified master’s prepared nurse practitioners who would like certification in additional specialty areas. The curriculum is designed on an individual basis for these specialty certifications.

**PHYSICAL THERAPY**

www.odu.edu/dpt

George Maihafer, Chair and Graduate Program Director

**Doctor of Physical Therapy (Professional Preparation Degree Program)**

The Doctor of Physical Therapy program is designed to professionally prepare students with the knowledge and clinical experiences to become licensed physical therapists who will enter general physical therapy practice. Upon graduation, students will be prepared to sit for licensure in any United States jurisdiction and practice in any health care setting where physical therapy is offered. The curriculum consists of 117 credit hours over a three-year period of time including summers. There are five full-time clinical internships totaling 40 weeks. The first three are completed over the second and third summers, with the final 16 weeks of clinical education occurring in the spring semester preceding graduation. A variety of clinical facilities locally, throughout Virginia, and the United States are used for internship experiences. Students are responsible for providing their own transportation to these off-campus clinical sites.
Admission

Students are admitted to the program after completion of a bachelor’s degree and prerequisite course work. For preferential consideration, the application deadline is early January of each year. Applications will continue to be accepted and reviewed on a case-by-case basis until each class is filled. Specific procedures for admission must be followed; admission is competitive.

The following documents and requirements must be provided prior to being considered for admission.

1. An application to the University and a separate application to the Physical Therapy Program must be submitted. Applications may be obtained by calling (757) 683-4409, visiting the web site at www.odu.edu/physicaltherapy, or writing to Program in Physical Therapy, 129 William B. Spong Hall, Old Dominion University, Norfolk, VA 23529-0288. Upon completing the application packet materials, candidates are asked to return the packet to: Office of Admissions, Alfred B. Rollins Jr. Hall, Old Dominion University, Norfolk, VA 23529-0050.

   The applicant should include the following:
   a. Three letters of recommendation (one from a physical therapist);
   b. All completed official transcripts from the school(s) attended sent to the Office of Admissions;
   c. Completed Graduate Record Examination (GRE) scores sent to the Office of Admissions;
   d. Evidence of substantive and varied volunteer work experiences in physical therapy setting(s); a minimum of 80 contact hours, 40 hours of which are in an acute care physical therapy department. Verification forms are included in the physical therapy application.
   e. An essay and written short answers are required. Information about the format is included in the physical therapy application.

2. International applicants should contact the Office of International Admissions at (757) 683-3701 regarding immigration, application requirements, and financial concerns.

   A competitive admission process is used for determining acceptance. Qualified high school students may apply for admission with guaranteed entry into the Doctor of Physical Therapy program. For criteria and additional information, please contact the Office of Admissions or the College of Health Sciences advisor at (757) 683-5137.

Requirements

Prerequisite courses include the following: ENGL 110C; STAT 130M; BIOL 115N; CHEM 115N-116N or 101N-102N; PHYS 111N-112N; BIOL 250 and 251; PSYC 201S or 203S; social studies elective (3 credit hours); and an introductory course in kinesiology (EXSC 416) is recommended.

Courses required in the program are BIOL 590, 592, 593, 889; CHP 720; PT 810/HLSC 710/810, PT 600, 621, 627, 628, 630, 634, 635, 640, 641, 655, 656, 666, 669, 695, 803, 822, 826, 827, 836, 837, 842, 857, 858, 865, 871, 872, 873, 874, 880, 881, 882, 883, 884, 890, 891, and one course selected from PT 894, 896, 897. Students are required to pass written and oral comprehensive examinations prior to graduation.
The College of Sciences’ degree programs are designed to prepare students for careers in the sciences or to lay broad foundations for specialized training in these fields of knowledge. The college is comprised of the Departments of Biological Sciences, Chemistry and Biochemistry, Computer Science, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, Physics, and Psychology. The Departments of Biological Sciences, Chemistry and Biochemistry, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, and Physics cooperate with the Darden College of Education to provide the necessary courses for certification to teach in the Commonwealth.

Undergraduate Degree Requirements for all Majors in the College of Sciences

Core Requirements

Fulfilling the University General Education Requirements for a specific program satisfies the degree requirements for the College of Sciences. All degrees offered by the college, except for the Bachelor of Science in Computer Science, are traditional in terms of the General Education program. Refer to the University General Education section of this Catalog for details about which courses satisfy the skills, perspectives, and upper-division requirements of the General Education program.

Additional major requirements are listed under the various departmental programs.

General Requirements

A. Students wishing to take a major or a minor in the College of Sciences must declare with the appropriate department.
B. No one course may be applied to the fulfillment of more than one core requirement.
C. The College of Sciences allows a maximum of four hours of activity credit to be applied toward any degree granted by the college. Activity credit required by a student's major department will not be counted toward the credit limitation. (See the Catalog section on Activity Credits for the definitions and other restrictions on activity course credits.)

General Education – New Portal to Appreciating our Global Environment

New Portal to Appreciating our Global Environment, GEN 101, is a general education course required for all first-year and transfer students with fewer then 12 transfer credits. GEN 101 may be substituted for one three- or four-hour general education perspective course.

The College of Sciences has approved the following substitutions. Students majoring in biology may substitute GEN 101 for a course in the history or social science perspective areas. Students majoring in chemistry, biochemistry, and physics must substitute GEN 101 for a course in the social science perspective. Students majoring in computer science may substitute GEN 101 for a course in the history, philosophy or social science perspective areas. Students majoring in mathematics may substitute GEN 101 for a course in the fine and performing arts, history, literature, philosophy, or social science perspective areas or the third course in the natural science and technology perspective. Students majoring in ocean and earth science may substitute GEN 101 for a course in the fine and performing arts, literature, philosophy or social science perspective areas. Students majoring in psychology may substitute GEN 101 for a course in the social science perspective or the third course in the natural science and technology perspective. Students should consult their advisors for additional information.

College of Sciences Degree Programs

<table>
<thead>
<tr>
<th>Programs of Study</th>
<th>B.S.</th>
<th>M.S.</th>
<th>Ph.D.</th>
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<tr>
<td>Biomedical Science</td>
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<tr>
<td>Biological Chemistry Track</td>
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<tr>
<td>Clinical Chemistry Track</td>
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<tr>
<td>Clinical Psychology</td>
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<td></td>
<td></td>
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<tr>
<td>Life Sciences</td>
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<td></td>
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<tr>
<td>Biology</td>
<td>X</td>
<td>X</td>
<td>X*</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>X</td>
<td>X*</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
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<td>X*</td>
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<tr>
<td>Physical Sciences</td>
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<td></td>
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</tr>
<tr>
<td>Chemistry</td>
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<td></td>
<td>X*</td>
</tr>
<tr>
<td>Computer Engineering</td>
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<td>X*</td>
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<tr>
<td>Computer Science</td>
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<td>X8</td>
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<tr>
<td>Computer Science (Computer Information Sciences)</td>
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<tr>
<td>Geology</td>
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<tr>
<td>Mathematics</td>
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<td>X*</td>
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<td>Ocean and Earth Science</td>
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<td>Oceanography</td>
<td>X</td>
<td></td>
<td>X8</td>
</tr>
<tr>
<td>Physics</td>
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<td></td>
<td>X8</td>
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</tbody>
</table>

Notes:

1. Ph.D. in biomedical science offered jointly by Old Dominion University and Eastern Virginia Medical School with tracks in clinical chemistry, biological chemistry, neuroscience, vector-borne diseases and environmental health, molecular and cellular biology, cellular endocrinology and reproductive biology, immunology and cancer biology, cardiovascular sciences, and general biomedical sciences.
2. Track within chemistry master's degree program.
3. Doctor of Psychology (Psy.D) offered through the Virginia Consortium for Professional Psychology, sponsored by the College of William and Mary, Eastern Virginia Medical School, Norfolk State University, and Old Dominion University.
4. Ecological sciences. Optional dual degree program with master's degree in computational and applied mathematics with emphasis in statistics. Training opportunities are available with faculty in the Departments of Biological Sciences, Chemistry and Biochemistry, and Ocean, Earth and Atmospheric Sciences.
5. Applied experimental, human factors, or industrial/organizational psychology.
6. Computational and applied mathematics, with emphases in applied mathematics and statistics/biostatistics.
7. Computational and applied mathematics, with emphases in applied mathematics, statistics and biostatistics.
8. Offered jointly with the College of Engineering and Technology.
9. Offered jointly with the College of Business and Public Administration.

Graduate Programs

The College of Sciences has developed graduate programs in the basic and applied sciences that meet the needs of the Eastern Virginia region, the state, and the nation. These programs address a variety of challenges, ranging from basic research to the quest for solutions to contemporary problems in science. The importance of these challenges is reflected by the more than $16 million in funded grants and contracts for educational and research endeavors currently generated by the college. The college provides the mid-Atlantic states with much-needed graduate programs in broad fields of concentration leading to both master's and doctoral degrees. Related program emphases within the major areas of study are designed to meet the professional needs of the students and communities served.

The college's faculty of 158 highly skilled professional educators is devoted to guiding students toward an assimilation of the most current scientific theories, research, and practices.

College Financial Aid. The College of Sciences has established teaching and research assistantship stipends that range from $5,250 to $17,500. The responsibility for distributing these assistantship stipends lies in each department. In addition, each department has fellowship and tuition grant funds available for competitive distribution.

Dominion Graduate Scholars. The very competitive Dominion Graduate Scholar awards are for students newly admitted into Ph.D. programs. A portion of these awards is administered by each of the departmental programs and others are competitive across the College of
Students attending professional school in medically related fields

Old Dominion University students attending medical, dental, or veterinary school without a bachelor’s degree shall be given the opportunity of receiving the bachelor’s degree in accordance with the prescribed criteria as follows.

1. The student applying for the degree must complete a minimum of 90 semester hours of undergraduate credit prior to attending professional school.

2. The student must fulfill the General Education requirements of the University and the College of Sciences.

3. Thirty of the last thirty-six hours prior to professional school must be taken at Old Dominion University.

4. This policy is applicable to any bachelor's degree offered by Old Dominion University. It must be kept in mind, however, that all departmental requirements must be met either prior to professional school or by using courses taken during the first year of professional school. This latter course of action requires written petition to and approval by the appropriate departmental chair. In either case the student must complete at least two-thirds of the major requirements for the degree prior to attending professional school.

5. The degree is to be awarded only after completion of one year of professional school with acceptable academic performance (to be determined by a letter from the professional school stating that the student is eligible to matriculate for the second year).

6. The student would apply for the bachelor's degree on completion of one year of professional school. Certification by the appropriate department chair is required as usual.

Prehealth Advisement—Prehealth Advisory Committee

Students seeking careers in medicine, dentistry, osteopathy, optometry, podiatry or veterinary medicine should request advisement as early as possible from the College of Sciences prehealth advisor, as well as from their major or other academic advisor. This is to obtain general information of value in gaining acceptance to the professional school of choice, such as how and when to apply for admission, preparation for preprofessional tests and interviews, obtaining letters of evaluation and recommendation, and choosing among the many different schools and professions. Advice is also given on course selection, although only the academic advisor can formally approve these selections.

Students seeking admission to medical, dental and other medically related professional schools should confer with the Prehealth Advisory Committee in their junior year concerning the preparation of letters of evaluation by the Committee.

The prehealth advisor is Terri Mathews, Assistant Dean, College of Sciences, (757) 683-5201.

Accelerated Tracks in Marine Science and Environmental Science

The accelerated track programs in marine science and in environmental science make it possible for motivated, well-prepared students to complete both the B.S. and M.S. degree in five years. Beginning in their freshman year, accelerated track students participate in a structured curriculum (Fall-Spring-Summer), taking many of their classes together and
eventually following course work that leads to undergraduate degrees in biology, chemistry, or ocean and earth science. During their first and second years, students start internships, field work, study-abroad programs, and other academic and practical experiences outside the traditional classrooms and laboratories. As juniors, they begin to participate actively in an interdisciplinary seminar program that addresses major issues in environmental sciences and marine sciences. Fourth- and fifth-year students take graduate courses that lead to M.S. degrees in oceanography, biology, chemistry, and geology. Students on a marine science track in these programs will take four graduate-level core courses in oceanography or related fields; those in an environmental science track will take four graduate-level core classes taught by several departments. See individual undergraduate and graduate program descriptions for detailed information.

Students accepted into the College of Sciences Accelerated Track program should meet Honors admission standards. High school seniors and college freshmen seeking admission into the Accelerated Track program should have a high school GPA of 3.25 and an SAT of 1180. Junior transfer students admitted into the Accelerated Track program must have a GPA of 3.00 or better in all course work attempted at the college(s) from which they are transferring. Also, junior transfer students must meet the same science, mathematics, and General Education requirements as students entering the Accelerated Track program as freshmen. Students interested in applying to the program need to contact their chief departmental advisor and the program director for the accelerated tracks, Office of the Dean, College of Sciences, (757) 683-3274.

B.S./M.B.A. Five-Year Program

This program allows students to complete a B.S. degree in biology, chemistry, computer science, mathematics or psychology and an M.B.A. degree in five years. Students interested in this program should contact the M.B.A. program director as early as possible. The M.B.A. program director will act as an advisor to the student in addition to the undergraduate advisor. The M.B.A. Program Office is located in Constant Hall, 1039 and can be contacted at 683-3585.

Entrance Requirements

To be accepted into the program students should have:

- completed at least 24 credit hours at Old Dominion University with a GPA of at least 3.00;
- completed all lower-level general education requirements;
- achieved senior standing at Old Dominion University;
- completed a calculus course, equivalent to MATH 200;
- achieved a minimum Graduate Management Admissions Test (GMAT) score of 550; and
- achieved a minimum index of 1200. (The index is computed as 200 times the Old Dominion University GPA plus the GMAT score.)

Admissions Procedure

Students should plan to take the GMAT at least two semesters prior to the semester in which they plan to enroll. Official applications and credentials should be submitted to the M.B.A. Program Office according to published deadlines.

Students accepted into the five-year B.S./M.B.A. program must complete the following courses from the M.B.A. core during their senior year. These credit hours will count toward the undergraduate degree and satisfy the upper-division general education requirement for graduation. Students must maintain a 3.00 GPA in these courses.

Accounting for Managers ACCT 601 3 hours
Statistics for Business and Economics DSCI 600 3 hours
Managerial Economics and International Trade ECON 604 3 hours
Financial Management FIN 605 3 hours
Organizational Management MGMT 602 3 hours
Marketing Management MKTG 603 3 hours
After students have satisfactorily completed their undergraduate requirements, they must complete an additional 30 hours in the M.B.A. program. For detailed information on courses and concentrations, please refer to the M.B.A. information found in this Catalog.

Research and Service Centers

Center for Computational Science. The center provides a focus for the University’s efforts to perform scientific investigation through large-scale computer models of natural phenomena. It complements the Virginia Modeling, Analysis and Simulation Center, which focuses primarily on the simulation of human-engineered systems, though some underlying methodologies overlap. With close ties to the Department of Energy and NASA laboratories and support from these agencies and NSF, center personnel perform computationally intensive research, develop algorithms and software for high-end parallel computers, train computationally oriented graduate students and post-docs, and disseminate the products of their research, directed scientific results and software libraries, within and beyond the University.

Center for Science and Mathematics Literacy. The center provides educational services, helpful in teaching science or mathematics or for making the general public more literate in these areas. The center has developed a science/mathematics resources center, encourages instructors of credit courses to address the science/mathematics literacy problem, develops or aids in developing proposals for funding better science/mathematics education.

Commonwealth Center for Coastal Physical Oceanography. The Commonwealth Center for Coastal Physical Oceanography focuses research efforts on major physical processes in the coastal ocean. These processes include continent scale currents, exchange with the open ocean, and effects of global change. Techniques focus on computer modeling and analysis of existing data bases. The center provides advanced computer resources, technical support, and funding for faculty, research associates, and students. Visitors are encouraged to use the facility during either short- or long-term stays.

BIOLOGICAL SCIENCES

Lynton J. Musselman, Chair
Kneeland Nesius, Chief Departmental Advisor

The Department of Biological Sciences provides the student with a broad selection of course offerings in biology. The degree program in biology contains several core courses and allows the selection of elective subjects most suited to the individual’s vocational interests.

To help students tailor their degree program to their specific learning and career goals, the Department of Biological Sciences organizes its courses into three general degree tracks, each of which includes a series of more narrowly tailored concentration areas. The tracks and their concentration areas are:

1. Professional: prepares students for specific careers or entry into professional programs; concentration areas are:
   a. Secondary Science Education
   b. Pre-Health (prepares students for application to medical, dental, physical therapy, and physicians assistant school)
   c. Pre-Optometry
   d. Pre-Pharmacy
   e. Pre-Veterinary Medicine

2. Physiology/Cellular Biology/Molecular Biology
   a. Microbiology
   b. Physiology
   c. Cell/Molecular Biology

3. Ecology/Environmental Biology
   a. Marine Biology
   b. Botany
   c. Zoology
   d. Ecology and Conservation Biology

For detailed course requirements for the concentrations not specifically listed below, please contact the Biology Department advisor, Dr. Kneeland Nesius, Mills Godwin Building 108C.

Bachelor of Science—Biological Major

LOWER DIVISION GENERAL EDUCATION Credits
Written Communication
Oral Communication (Satisfied by BIOL 405W) 6
Mathematics (MATH 162M required) 3
Foreign Language (Competence must be at the 102 level) 0-6
Computer Skills (CS 149D or higher required for Biology and Marine Biology; teacher education satisfied in the Professional Education core by ECI 304) 3
Fine and Performing Arts 4
History 3

COLLEGE OF SCIENCES 219
Oceanography, the Department of Ocean, Earth and Atmospheric Sciences' research vessel. Additional facilities at Old Dominion University include field vehicles and boats, as well as by the Department of Oceanography. The Center for Coastal Physical Oceanography, the Department of Ocean, Earth and Atmospheric Sciences, and the Virginia Barrier Island Field Station.

Bachelor of Science—Biology Major Secondary Education Concentration

This program leads to eligibility for teacher licensure in Virginia and is available only to individuals holding a baccalaureate degree or completing requirements for a Bachelor of Science degree in biology.

Biology Major with Teaching Licensure in Biology

The course work must include one course each in botany, ecology, microbiology, physiology, and human anatomy.

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 309.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education 152. The PRAXIS II Biology Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and complete a minimum of 128 credit hours.

The Professional Education core courses are as follows:

ECI 301 Social Cultural Foundations of Education
ECI 304 Technology Applications in Education (satisfies computer skills requirement)
ECI 360 Classroom Management and Discipline
ECI 408 Reading and Writing in Content Areas
ECI 454 Developing Instructional Strategies: Science
ECI 485 Student Teaching
ESSE 406 Special Needs Children-General Ed
ESSE 413 Fundamentals-Human Growth and Development

Preparation for Medical and Dental Studies

Biological science students seeking careers in medicine, dentistry, osteopathy, optometry or podiatry should request advisement from Dr. Ralph W. Stevens III, the prehealth advisor, who is located in the Department of Biological Sciences.

Science courses required by all of the above professional programs are BIOL 115N-116N; CHEM 115N-116N; 311-312-313; PHYS 111N-112N (or 231N-232N) and MATH 200. Students should confer with their advisors to select the most appropriate math courses and additional science courses. The most frequently recommended biology courses are in the areas of human or vertebrate anatomy and physiology and those stressing the molecular and cellular levels of organization. However, students also are encouraged to explore other disciplines while they have the opportunity, such as ecology, to develop a broader view of life processes and the human condition.
Minor in Biology

Completion of BIOL 115N-116N and at least 12 semester credit hours in departmental courses at the advanced level (300 and 400 level) is required. This does not include BIOL 317.

Students obtaining a Bachelor of Science in Medical Technology or Environmental Health may complete a minor in biology by taking an additional 12 hours in biology at the 300 and 400 levels.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Honors Program in Biology

A. Honors Research

Undergraduates with junior or senior standing and a GPA of 3.00 or better are eligible to participate in Honors Research. After consultation with the program director (Dr. Deborah A. Waller), students select a professor who agrees to oversee the research project. Students then enroll in two 4-credit courses, BIOL 487 and 488. The courses may be taken in any sequence: fall-spring, spring-summer, summer-summer, summer-fall. Normally both semesters are required but a student may receive credit for only one semester. The research project, time commitment by the student and the basis for the grade are mutually determined by the student and professor. Because first-semester research results are often preliminary, the grade for BIOL 487 is based on a review paper and/or research proposal, which provides the student with an overview of the field. The second semester is graded on the final research paper and a seminar presented to the honors committee and interested faculty. Professors should encourage students to publish results and present papers at scientific meetings when appropriate. Students should also be urged to apply for funds from agencies that provide seed money to undergraduates. The program director can provide information on scientific societies that sponsor meetings and/or offer small grants.

B. Bachelor’s Degree with Honors in Biological Sciences and Honors Designation for Biology courses

Students maintaining an overall GPA of at least 3.25 and of 3.50 in biology can receive a “Bachelor’s Degree with Honors in Biological Sciences” subject to satisfaction of the minimum University standards for the Honors degree and completion of one of the following two options:

Option 1: Successful completion of two semesters of biological research taken as BIOL 487/488 (Honors Research).

Option 2: Successful completion of three upper-division courses in Biological Sciences and achievement of the “Honors” designation in each. Students petitioning for designation of an upper division biology course as “Honors” must have a minimum overall GPA of 3.25 and a GPA of at least 3.50 in biology.

To receive the “Honors” designation for a course, students must achieve a final course score of at least 95% or the equivalent of an “A” on the University grade scale.

Faculty are encouraged to assign and work with students on other activities deemed appropriate for an “Honors” course designation and utilize the results of these activities in the assignment of a course grade.

Advanced Placement

Students may receive advanced placement for BIOL 115N or 116N (4 credits) by a score of 3 on the advanced placement examinations. Students receiving a score of 4 or 5 will receive credit for BIOL 115N and 116N (8 credits). Application may be made directly to the Testing Center in Academic Skills Programs prior to fall registration. Students may also refer to the section of this Catalog on Experiential Learning Credit Options at the Undergraduate Level.

Master of Science—Biology

Wayne Hynes, Graduate Program Director

The Master of Science degree in biology is one of the largest graduate programs in the College of Sciences. Students in this program may develop a curriculum designed specifically for a particular interest and receive training in numerous emphasis areas including: biomedical sciences, botany, ecology, immunobiology, marine biology, microbiology, physiology, reproductive biology, systematic biology, and zoology. In addition, there are two specially designed concentration areas in biotechnology and wetland ecology.

Special research and training facilities within the Department of Biological Sciences include: electron microscope suite, terrestrial and aquatic animal care facilities, radiobiological assay laboratory, environmental education laboratory, marine benthic ecology laboratory, quantitative fisheries laboratory, plant and animal cell culture laboratories, greenhouse, biotechnology laboratories, herbarium, animal collections museum, and computing center. In addition, excellent opportunities exist for research and instruction off-campus at the department’s Blackwater Ecological Preserve and through associations and agreements with the Eastern Virginia Medical School, the Virginia Coast Reserve—Long Term Ecological Research Site, the Virginia Institute of Marine Sciences, Eastern Shore Marine Laboratory, and other regional agencies and facilities.

There are two degree options available — thesis and non-thesis. A minimum of 31 semester hours of graduate credit is required of thesis students and 37 of non-thesis students; three-fifths of these credits must be at the 600-level or above and in structured courses. Seminar (BIOL 608 or equivalent) and research (BIOL 698) are required of all students. A substantial research project and a written thesis (BIOL 699) are also required of students selecting the thesis option. The remaining course work is selected according to the special interest of the student, with the guidance and approval of the student’s faculty advisory committee.

Admission

Requirements for regular admission to the Master’s Program in biology are:

A bachelor’s degree in biology or a related field from an accredited college or university;

A grade point average of 3.00 in the major and at least 2.80 overall (on a 4.00 scale);

Satisfactory scores on the General and Biology portions of the Graduate Record Examination (GRE) or on the Medical College Admission Test (MCAT);

Two satisfactory letters of recommendation;

An essay describing professional goals and motivation for graduate study in biology; and

Written acknowledgment from a faculty member from the department agreeing to serve as the student’s major advisor, if the student is accepted.

Students who lack a degree in biology or do not meet all of the admission standards, but are otherwise qualified, may be admitted on a provisional status. The Test of English as a Foreign Language (TOEFL) is required of all foreign applicants.

Deadlines for application to the program are: February 1 for summer admission, early fall admission and consideration for a graduate teaching assistantship; June 1 for fall semester admission; and October 1 for spring semester admission.

Master of Science—Wetland Biology Concentration

The wetland biology concentration has been structured to contain essential clusters in the following disciplines: plant identification, wetland and aquatic ecology, soils and hydrology, regulation, technical application, topical seminars, internships, and research and/or thesis. The core curriculum includes BIOL 519, 543, 550, 695, 698, 706, 708, GEOL 508, and 640.

Master of Science—Biotechnology Concentration

The biotechnology program is designed to provide the student with the basic skills in cell and molecular biology with the flexibility to develop a curriculum in the areas of infectious diseases, immunology, physiology, or environmental molecular biology. The graduate program in biotechnology is offered as an emphasis under the M.S. degree in biology and stresses the development of laboratory skills at the molecular and cellular level (which may be applied to the whole organism). The research and instructional facilities include laboratories in electron microscopy (both transmission and scanning), spectroscopy, cell culture (plant and animal), protein separation, PCR, DNA sequencing, as well as modern animal and greenhouse facilities.
Coursework

Students in the biotechnology track must satisfy the requirements for the M.S. degree in biology, but have great flexibility in designing a suitable program of study. There are two degree options available: thesis and nonthesis. A minimum of 31 semester hours of graduate credit is required of thesis students and 37 of nonthesis students. Seminar (BIOL 608 or 661) and research (BIOL 698) are required of all M.S. students.

A substantial research project and a written thesis (BIOL 699) are also required of students selecting the thesis option. Biotechnology students are required to take four core courses: Molecular and Immunological Techniques (BIOL 507), Cellular and Molecular Biology (BIOL 523), Biochemistry (BIOL 726), and Molecular Genetics (BIOL 755). The remaining coursework is selected according to the special interest of the student, with the guidance and approval of the student's faculty advisory committee. Many pertinent graduate courses are offered and can be applied toward the degree requirements. Such courses include the following:

Infectious Diseases, Immunology, Physiology

509 Immunology
510 Immunology Lab
513 Biometry
516 Clinical Immunology
524 Animal Physiology
527 Neurobiology
530 Microbial Pathogenesis
580 Advanced Human Physiology Lab
584 Advanced Human Anatomy
587 Anatomy for Trainers

590 Advanced Human Physiology
593 Human Neurophysiology
704 Disease Vector Ecology
705 Advanced Microbiology
709 Developmental Biology
712 Electron Microscopy
716 Endocrinology
730 Emerging Infectious Diseases
745 Advanced Immunology
789 Gross Anatomy

Environmental Biology

500 Taxonomy of Vascular Plants
504 Conservation Biology
512 Plant Physiology
513 Biometry
514 Bible Plants
515 Marine Ecology
517 Limnology
519 Wetland Delineating Plants
520 Ichthyology
521 Ornithology
522 Field Study Ornithology
531 Mammalogy
533 Cave Biology
541 Animal Behavior
542 Marine Ecology Lab
543 Environmental Impact Assessment
545 Community Ecology

546 Wildlife Population Ecology
550 Principles of Plant Ecology
552 Environmental Biology Lab
553 Environmental Biology Lab
557 Herpetology
578 Microbial Ecology
579 Microbial Ecology Lab
632 Marine Microbiology
701 Systematic Biology
707 Ecosystem Ecology
720 Systematic Ichthyology
721 Speciation
728 Simulation Models: Ecosystem
and Global Applications
749 Biogeography
750 Marine Benthic Ecology
752 Quantitative Ecology

Admission

Students who wish to enter this program should apply to the master's in biology program and indicate this desire in their Statement of Interest, a required component of the M.S. application. Applications for admission may be obtained via the Internet at http://www.odu.edu/aod/admissions/applications.html or from:

Office of Graduate Admissions
Old Dominion University
Norfolk, VA 23529-09050
(757) 683-3637

Program Director, M.S. in Biology
Department of Biological Sciences
Old Dominion University
Norfolk, VA 23529-0266
(757) 683-3595

Master of Science in Education—Biology

Refer to the Darden College of Education section of this catalog.

Doctor of Philosophy—Ecological Sciences

Alan H. Savitzky, Graduate Program Director

The primary goal of the doctoral program in ecological sciences is to train ecologists to conceptualize, coordinate, and supervise interdisciplinary studies of environmental problems and to direct ecological research in industries, governmental agencies, or academic institutions. The program offers several interdisciplinary emphasis areas that provide breadth of training. Students share a number of common experiences and courses but also receive focused attention within their specialty area in their home department (Biological Sciences, Chemistry and Biochemistry, or Ocean, Earth, and Atmospheric Sciences). Excellent resources on campus (computers, GIS facilities, electron microscope, greenhouse, analytical chemistry labs, video digitizing facilities, etc.) and field research sites (Virginia Coast Reserve LTER site, Blackwater Ecologic Preserve, Great Dismal Swamp, Atlantic Ocean, Chesapeake Bay, and others) enhance the program.

Admission

Application forms for admission to the Ph.D. program in ecological sciences are available from the Office of Admissions and online. The following should be sent to the Admissions Office: the completed application form; official transcripts from all universities attended; Graduate Record Examination (GRE) scores; Test of English as a Foreign Language (TOEFL) score (from students whose native language is not English); three letters of recommendation, including one from the applicant's major advisor; and a statement of professional goals that includes specific research interests. The financial aid form (if applicant is requesting financial aid) should be sent to the Director, Ecological Sciences Ph.D. Program, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266. Deadlines for application to the program are July 15 for the fall semester, November 1 for the spring semester, and April 15 for the summer term. Financial aid applications should be received by March 1 for the fall semester.

To qualify for admission, a student needs a satisfactory academic average and GRE scores, a TOEFL score of at least 550 (for students whose native language is not English), and satisfactory letters of recommendation and statement of professional goals. A master's degree is desirable but not required. The applicant is expected to have a background in the sciences, with an appropriate undergraduate degree and substantial course work in biology, chemistry or geology.

The applicant is advised to contact a member of the faculty, in the applicant's area of interest, who might serve as a major advisor. Personal interviews are desirable but not required.

Requirements

A minimum of 48 semester hours of course work beyond the master's level or 70 hours beyond the baccalaureate is required. The student's program of study should be broad and balanced. Course work varies with each student, depending on background and goals. Enrollment in a weekly ecology seminar is required one semester each year. Professional experience (environmental management or teaching) is encouraged.

Each student must demonstrate competency in a single foreign language or computer skill, pass written and oral candidacy examinations, conduct an independent research project, and write and successfully defend the dissertation.

Dual Degrees in Ecology and Statistics

Ph.D. in Ecological Sciences and M.S. in Computational and Applied Mathematics (Statistics Option)

Statistical skills are much in demand among ecologists to effect appropriate programs of experimental design and analysis in research and to correctly apply the results of that research. This dual degree program allows the student to earn the M.S. degree in computational and applied mathematics (statistics option) while also obtaining the Ph.D. in ecological sciences. The student must be admitted to each program based on the admission requirements and procedures of the respective departments. Likewise, the student must satisfy all requirements of each degree. The student will receive guidance from or her guidance committee in the ecological sciences program and the graduate program director in the computational and applied mathematics program. If the student enters the Ph.D. program with a master's degree, he or she must...
The program of study is interdisciplinary in nature. All students are required to acquire a broad knowledge of the basic biomedical sciences. Integration of the basic courses is reinforced by a rotation of laboratory experiences and by special seminars that highlight disciplinary interrelationships and approaches to biomedical research. The student progresses from the common core of basic courses to in-depth study of specific biomedical problems. This includes advanced doctoral courses and the doctoral research project. Under the guidance of the graduate faculty, the breadth provided by the spectrum of biomedical disciplines is maintained throughout the focus on an area of specialization. The graduate of the program is a scientist with a broad biomedical education and a demonstrated ability to carry out original and creative research, cognizant of the disciplinary interfaces and implications and capable of pursuing and/or recommending continuing lines of study. The graduate is prepared to bridge the gap between practice and discovery in the art of medicine and the philosophy of science. The graduate is capable of serving in an industrial, governmental, or academic teaching or research setting, either independently or as a member of a team.

Admission

The requirements for admission to the biomedical sciences Ph.D. program are as follows:

1. A bachelor's degree from an accredited college or university with a B (3.00) average. Students with advanced degrees are encouraged to apply.
2. Completion of the Graduate Record Examination (GRE).
3. Prior training in biology (two years), calculus and/or statistics, and organic chemistry (one year). Additional courses in biology, chemistry, and physics are recommended.
4. Certain tracks (e.g., clinical chemistry) may have additional prerequisite course work that must be satisfied before the formal graduate program of study can begin.

Virginia residency laws from the Code of Virginia apply to classification of applicants and students regarding tuition charges and for other privileges accorded only to residents of Virginia.

Curriculum and Requirements

To accomplish the objectives of the program, the student:

- Selects one of the approved tracks defining basic and advanced course work options;
- Enrolls in the basic biomedical sciences courses to develop a broad foundation for more advanced course work and dissertation research;
- Selects appropriate advanced course work approved by the guidance committee;
- Completes at least 79 credit hours beyond the bachelor's degree or 48 credit hours beyond the master's degree;
- Rotates through three laboratories about research questions and techniques in a variety of disciplines;
- Presents two seminars;
- Passes written and oral qualifying examinations on course work;
- Develops an interdisciplinary research proposal;
- Performs research in such a fashion as to demonstrate unequivocally the ability to carry out original and creative research; and
- Prepares and successfully defends a dissertation.

The student's curriculum is designed with the assistance and approval of a guidance committee, following guidelines established by the track that most closely matches the student's interests. The following tracks are approved within the biomedical sciences program: biological chemistry, clinical chemistry, pure and applied biomedical sciences, cell biology and molecular pathogenesis, and systems biology and biophysics. The program of study in each track is divided into three phases (subdivided as a convenience to the student and the faculty, but possibly overlapping):

Phase I (basic course work) introduces the student to much of the same basic science information as the medical student and provides the opportunity for applicants of different backgrounds to strengthen their training in preparation for the more advanced phases. Courses are taught at both Old Dominion University and Eastern Virginia Medical School.

Phase II (specialization in an area of interest) enables students to develop depth of knowledge through intensive study in advanced course work and tutorials.

Phase III (research and dissertation) allows students to develop excellence in creative research in interdisciplinary problems in the Biomedical Sciences.

The program handbook describes in greater detail the development of the course sequences and the qualifying steps for progress through each of the phases leading to the award of the Ph.D. degree.

Application Procedures

The completed application for the biomedical sciences Ph.D. program will include the following items:

1. Transcripts of all college course work. Transcripts will be official transcripts sent by the registrars of the colleges attended.
2. Graduate Record Examination (GRE) test scores, sent directly from the Educational Testing Service to the Old Dominion University Graduate Admissions Office.
3. A statement of personal goals and academic objectives.
4. Three letters of recommendation, preferably from faculty members at colleges attended who are familiar with the applicant's academic and research capabilities.
5. A completed application form.
6. Receipt of a $30 application fee. Checks should be made payable to Old Dominion University.

Applications to Old Dominion University should be sent with all related documents and materials to the Office of Graduate Admissions, Old Dominion University, Norfolk, VA 23529-0050. It is the responsibility of the applicant to be certain that all application materials are received and the application is complete in all respects.

Financial Aid

Sources of financial aid available to Biomedical Sciences Ph.D. students from both institutions include waivers of tuition, tuition grants, research and teaching assistantships and loans.

CHEMISTRY AND BIOCHEMISTRY

Kenneth G. Brown, Chair
Jennifer Adamski, Chief Departmental Advisor

The Department of Chemistry and Biochemistry offers a program approved by the American Chemical Society. Graduates who meet requirements can be certified under this program. In addition to the courses listed below for the Bachelor of Science degree, certification requires the equivalent of two courses of advanced study to be selected after consultation with the student’s advisor.

Bachelor of Science—Chemistry Major

The program leading to the Bachelor of Science with a major in chemistry includes a diversity of fundamental and advanced courses in organic, inorganic, analytical, and physical chemistry. Chemistry majors must earn a grade of C or better in CHEM 115N-116N, 311, 312, 313, 314, 321, and 322. The grade point average in the major for chemistry majors is calculated based on Old Dominion University grades in all chemistry courses.
FRESHMAN FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry I</td>
<td>4</td>
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<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
<td>3</td>
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<tr>
<td>ENGL 110C</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 101H</td>
<td></td>
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<tr>
<td>HIST 102H</td>
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<td>CS 149D</td>
<td>Computer Skills</td>
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FRESHMAN SECOND SEMESTER

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<tr>
<td>CHEM 116N</td>
<td>Foundations of Chemistry II</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
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<tr>
<td>ENGL 111C</td>
<td>English Composition II</td>
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<tr>
<td>HIST 101H</td>
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<tr>
<td>PHIL 110P</td>
<td>or 120P or 150P</td>
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SOPHOMORE FIRST SEMESTER

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<tr>
<td>CHEM 311</td>
<td>Organic Chemistry Lecture I</td>
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<tr>
<td>CHEM 312</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Analytical Chemistry Lecture</td>
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SOPHOMORE SECOND SEMESTER

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<td>CHEM 313</td>
<td>Organic Chemistry Lecture II</td>
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<tr>
<td>CHEM 314</td>
<td>Organic Chemistry Lab II</td>
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<tr>
<td>PHYS 232N</td>
<td>University Physics II</td>
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<tr>
<td>CHEM 322</td>
<td>Analytical Chemistry Lab</td>
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<td>ENGL 112L or 144L or FLET 100L</td>
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<tr>
<td>Social Science Perspective</td>
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JUNIOR FIRST SEMESTER

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<td>CHEM 331</td>
<td>Physical Chemistry Lecture I</td>
<td>3</td>
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<tr>
<td>CHEM 333</td>
<td>Physical Chemistry Lab I</td>
<td>2</td>
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<td>CHEM 441</td>
<td>Introductory Biochemistry</td>
<td>3</td>
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<tr>
<td>MATH 312 (285)</td>
<td>Calculus III</td>
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<tr>
<td>Social Science Perspective</td>
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JUNIOR SECOND SEMESTER

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<td>CHEM 332W</td>
<td>Physical Chemistry Lecture II</td>
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<td>CHEM 334</td>
<td>Physical Chemistry Lab II</td>
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<td>General Education Cluster or minor courses</td>
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SENIOR FIRST SEMESTER

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<tr>
<td>CHEM 423</td>
<td>Spectroscopic Methods</td>
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<tr>
<td>CHEM 424</td>
<td>Electrochemical Methods</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 425</td>
<td>Separations</td>
<td>2</td>
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<tr>
<td>CHEM 451</td>
<td>Advanced Inorganic Chem Lec</td>
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</tr>
<tr>
<td>CHEM 452</td>
<td>Advanced Inorganic Chem Lab</td>
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<tbody>
<tr>
<td>CHEM 485</td>
<td>Chemistry Seminar (meets oral communication requirement)</td>
<td>1</td>
</tr>
<tr>
<td>Fine and Performing Arts Perspective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
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<td>8</td>
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</table>

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment. Additional hours may be required to meet the foreign language requirement. Chemistry majors may not use the biochemistry minor to fulfill upper-division general education requirements.

Accelerated Track Program. The Department of Chemistry and Biochemistry offers an accelerated track program to provide outstanding students the chance to complete both the B.S. and M.S. degrees in chemistry in five years. This accelerated program includes tracks in environmental sciences and in marine sciences/oceanography (see the environmental sciences and marine sciences/oceanography track descriptions for the M.S. program). Students accepted into this program will work towards the B.S. in chemistry by taking a full schedule of courses each semester and summer. Graduate courses will begin in the summer following the third year and continue through the summer of the fifth year. When they are near completion of their undergraduate curriculum, accelerated track students can move into the M.S. chemistry program, in either the environmental sciences track or the marine sciences track, or they may enter the M.S.-oceanography program to study chemical oceanography.

Both the environmental sciences and the marine sciences/oceanography programs take a holistic approach to studying environmental and marine research problems by emphasizing the relationships between biological, chemical, and geological systems in the global environment. Contact the departmental office for more details at (757) 683-4078.

Bachelor of Science–Biochemistry Major

Biochemistry majors must earn a grade of C or better in CHEM 115N-116N, 311, 312, 313, 314, 321, and 322. The grade point average in the major for biochemistry majors is calculated based on Old Dominion University grades in all chemistry and biology courses.

FRESHMAN FIRST SEMESTER

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<td>3</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition I</td>
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</tr>
<tr>
<td>BIOL 115N</td>
<td>General Biology I</td>
<td>4</td>
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</table>

FRESHMAN SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 116N</td>
<td>Foundations of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 111C</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 116N</td>
<td>General Biology II</td>
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<tr>
<td>PHIL 110P or 120P or 150P</td>
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SOPHOMORE FIRST SEMESTER

<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 311</td>
<td>Organic Chemistry Lecture I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 312</td>
<td>Organic Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Analytical Chemistry Lecture</td>
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SOPHOMORE SECOND SEMESTER

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<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>CHEM 313</td>
<td>Organic Chemistry Lecture II</td>
<td>3</td>
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<tr>
<td>CHEM 314</td>
<td>Organic Chemistry Lab II</td>
<td>2</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Analytical Chemistry Lab</td>
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</tr>
<tr>
<td>CS 149D</td>
<td>Computer Skills</td>
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JUNIOR FIRST SEMESTER

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<tr>
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<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry Lecture I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 333</td>
<td>Physical Chemistry Lab I</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Introductory Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 312 (285)</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Perspective</td>
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JUNIOR SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 333</td>
<td>Physical Chemistry Lecture II</td>
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<tr>
<td>CHEM 334</td>
<td>Physical Chemistry Lab II</td>
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<tr>
<td>General Education Cluster or minor courses</td>
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SENIOR FIRST SEMESTER

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 423</td>
<td>Spectroscopic Methods</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 424</td>
<td>Electrochemical Methods</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 425</td>
<td>Separations</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 451</td>
<td>Advanced Inorganic Chem Lec</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 452</td>
<td>Advanced Inorganic Chem Lab</td>
<td>2</td>
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SENIOR SECOND SEMESTER

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 485</td>
<td>Chemistry Seminar (meets oral communication requirement)</td>
<td>1</td>
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<tr>
<td>Fine and Performing Arts Perspective</td>
<td>3</td>
<td></td>
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<tr>
<td>Electives</td>
<td></td>
<td>8</td>
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</table>

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment. Additional hours may be required to meet the foreign language requirement. Biochemistry majors may not use the chemistry minor to fulfill upper-division general education requirements.

Accelerated Track Program. The Department of Chemistry and Biochemistry offers an accelerated track program to provide outstanding students the chance to complete both the B.S. in biochemistry and an M.S. in chemistry (see biochemistry and clinical chemistry track descriptions for the M.S. program) in five years. Graduate courses will begin...
Bachelor of Science—Chemistry Major with Teaching Licensure

This program leads to eligibility for teacher licensure in Virginia and is available only to individuals holding a baccalaureate degree or completing requirements for a Bachelor of Science degree in chemistry. Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising, Education 152. The PRAXIS II Chemistry Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 134 credit hours. Additional hours may be required to meet the foreign language requirement. The professional education core satisfies the Upper Division General Education requirement.

The curriculum is as follows:

<table>
<thead>
<tr>
<th>FRESHMAN FIRST SEMESTER</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry I</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Precalculus II</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Composition I</td>
</tr>
<tr>
<td>HIST 101H, 102H, 103H, 104H, or 105H</td>
<td>3</td>
</tr>
<tr>
<td>CS 149D</td>
<td>Computer Skills</td>
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<table>
<thead>
<tr>
<th>FRESHMAN SECOND SEMESTER</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 116N</td>
<td>Foundations of Chemistry II</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
</tr>
<tr>
<td>ENGL 111C</td>
<td>English Composition II</td>
</tr>
<tr>
<td>HIST 101H,102H,103H,104H, or 105H</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 110P or 120P or 150P</td>
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<table>
<thead>
<tr>
<th>SOPHOMORE FIRST SEMESTER</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 311</td>
<td>Organic Chemistry Lecture I</td>
</tr>
<tr>
<td>CHEM 312</td>
<td>Organic Chemistry Lab I</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Analytical Chemistry Lecture</td>
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<thead>
<tr>
<th>SOPHOMORE SECOND SEMESTER</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry Lecture II</td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry Lab II</td>
</tr>
<tr>
<td>MATH 312 (285)</td>
<td>Calculus III</td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>University Physics II</td>
</tr>
<tr>
<td>CHEM 322</td>
<td>Analytical Chemistry Lab</td>
</tr>
<tr>
<td>ENGL 112L or 144L or FLET 100L</td>
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<thead>
<tr>
<th>JUNIOR FIRST SEMESTER</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry Lecture I</td>
</tr>
<tr>
<td>CHEM 333</td>
<td>Physical Chemistry Lab I</td>
</tr>
<tr>
<td>ECI 301</td>
<td>Social and Cultural Foundations of Education</td>
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<thead>
<tr>
<th>JUNIOR SECOND SEMESTER</th>
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<tbody>
<tr>
<td>CHEM 332W</td>
<td>Physical Chemistry Lecture II</td>
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<tr>
<td>CHEM 334</td>
<td>Physical Chemistry Lab II</td>
</tr>
<tr>
<td>CHEM 441</td>
<td>Introductory Biochemistry</td>
</tr>
<tr>
<td>ECI 408</td>
<td>Reading and Writing in the Content Area</td>
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<tr>
<td>ESSE 406</td>
<td>Special Needs Students</td>
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<tr>
<td>ECI 560</td>
<td>Classroom Management</td>
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<tr>
<th>SENIOR FIRST SEMESTER</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 423</td>
<td>Spectroscopic Methods</td>
</tr>
<tr>
<td>CHEM 424</td>
<td>Electrochemical Methods</td>
</tr>
<tr>
<td>CHEM 425</td>
<td>Separations</td>
</tr>
<tr>
<td>CHEM 451</td>
<td>Advanced Inorganic Chemistry Lecture</td>
</tr>
<tr>
<td>CHEM 452</td>
<td>Advanced Inorganic Chemistry Lab</td>
</tr>
<tr>
<td>ESSE 413</td>
<td>Human Growth and Development</td>
</tr>
<tr>
<td>ECI 454</td>
<td>Developing Instructional Strategies: Science</td>
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<table>
<thead>
<tr>
<th>SENIOR SECOND SEMESTER</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 445</td>
<td>Essentials of Biochemistry</td>
</tr>
<tr>
<td>CHEM 485</td>
<td>Chemistry Seminar (satisfies oral communication requirement)</td>
</tr>
<tr>
<td>ECI 485</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>Social Science Perspective</td>
<td>3</td>
</tr>
</tbody>
</table>

Preparation for Medical and Dental Studies

Students seeking careers in medicine, dentistry, or veterinary science are advised to complete a major in a specific discipline. Such students electing chemistry as their major must meet all of the requirements listed above for the degree of Bachelor of Science with a major in chemistry. In addition, the recommended course selections should include BIOL 115N-116N. (Office of the Dean, College of Sciences, 757 683-5200)

Pre-pharmacy Program

The following courses are recommended for students who wish to follow a two-year pre-pharmacy program. This program is particularly designed to meet requirements at the School of Pharmacy of Virginia Commonwealth University, which will accept only students who present at least 65 hours of credit. Students should consult schools of their interest regarding entrance requirements. Recommended courses are: CHEM 115N-116N, 311-313, 312-314; BIOL 115N-116N, ENGL 110C and three additional hours in English; MATH 162M, 163 and 205; PHYS 111N-112N; COMM 101R; PHIL 345; electives (liberal arts and behavioral sciences), 18 hours. Contact the Office of the Dean, College of Sciences, 757 683-5200.

Pre-optometry Program

Old Dominion University has an affiliation agreement with the Pennsylvania College of Optometry whereby students may transfer to the latter institution at the end of their third year and/or receive reduced tuition if they are Virginia residents. Students should contact the Office of the Dean, College of Sciences, 757 683-5200.

Minor in Chemistry

Students may only select one minor from the Department of Chemistry and Biochemistry to fulfill upper-division general education requirements. The chemistry minor consists of CHEM 115N-116N, 311-313, 312-314, 321, 322. Appropriate additions may be authorized by the chair of the Department of Chemistry and Biochemistry. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Biochemistry

Students may only select one minor from the Department of Chemistry and Biochemistry to fulfill upper-division general education requirements.
The biochemistry minor consists of CHEM 115N-116N, 311-313, 312-314, 441-443, and 442W. Appropriate substitutions or additions may be authorized by the chair of the Department of Chemistry and Biochemistry. For completion of a minor, a student must have a minimum overall grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Honors in Chemistry

The honors program provides qualified students the opportunity for supervised individual study in their areas of interest. Admission to the program requires a cumulative GPA of 3.25 or higher and a GPA of 3.50 or higher in the major. Students must take two upper-division courses designated by the department to be honors courses. These are termed “Contract Honors Courses.” A description of the procedures for these contract courses is found in the Honors College section of this Catalog.

Advanced Placement

Qualified students may take the advanced placement examinations in all chemistry lecture courses. Students who score 3 or higher on the Advanced Placement of the College Board exam may receive advanced placement credit for introductory chemistry courses. Entering students should make application to the Testing Center in Academic Skills Programs to the department chair well before the start of the fall or spring semester. Students may also refer to the section of this Catalog on Experiential Learning Credit Options at the Undergraduate Level.

Master of Science–Chemistry

John R. Donat, Graduate Program Director

The Department of Chemistry and Biochemistry offers a program of study leading to the degree of Master of Science with a major in chemistry. This program offers a sound academic background of course work and research to prepare the student for further graduate study or employment in fields requiring an advanced degree. Areas of specialization within the program include analytical chemistry, biochemistry, biogeochemistry, clinical chemistry, environmental chemistry, marine chemistry, materials chemistry, medicinal chemistry, organic chemistry and physical chemistry.

Admission

An application, transcripts, two letters of recommendation from former college teachers, and Graduate Record Examination (GRE) scores (aptitude section) are required for consideration of admission to the program. Admission to regular status requires a grade point average of 3.00 in the major and 2.80 overall (based on a 4.00 scale). General University admission requirements apply. In addition, a bachelor’s degree (or equivalent) with a major in chemistry (or another science) is required, although applications from majors in all science disciplines are encouraged. Undergraduate courses in inorganic, organic, analytical (quantitative and instrumental analysis), physical chemistry and calculus are required for regular admission. Deficiencies in any of these areas will be identified and must be rectified by taking undergraduate course work in these areas.

Requirements

Writing Proficiency Policy. Each graduate student entering the program must prepare an essay or a short paper (up to 500 words) to be submitted to the departmental graduate committee for the evaluation of the student’s writing proficiency. The graduate committee will evaluate this paper and refer the student to the Writing Center if remedial assistance in writing is necessary.

Options. Candidates for the master’s degree have two options in their program: the research/thesis option and the non-thesis option. Within each of these options, students may choose one of the several sub-discipline tracks described below.

Courses. A minimum of 31 hours is required for the thesis option, including six hours for research and thesis. A minimum of 34 hours is required for the non-thesis option, including three hours for independent study. Up to 15 hours may be taken in related courses given by other departments provided they are approved by the Graduate Studies Committee of the Department of Chemistry and Biochemistry. At least 60% of the credit hours must be from 600-level courses or higher.

Core Courses. There are six core courses. These are CHEM 541/543, 551, 701, 725, 749, and 779. Students enrolled in the research/thesis option must take three of the six core courses; non-thesis option students must take five of the six core courses.

Seminar. All students are required to take one semester of seminar (CHEM 610). Students are required to attend all seminars whether or not they are enrolled in CHEM 610.

Research and Thesis. During their first semester (and no later than the end of their first academic year) students electing the research/thesis option are required to interview the chemistry graduate faculty, choose a graduate faculty research advisor, and develop a research committee. The student must write a research proposal describing his/her proposed research project and present it to his/her research committee for approval. Upon completion of the research, the student must write a formal thesis acceptable to his/her research committee.

Analytical Chemistry Track. The analytical chemistry track provides students with advanced training in the theory and application of state-of-the-art analytical techniques and instrumentation and with opportunities to use them in cutting-edge environmental, materials, biochemical, clinical, and biochemical research. In addition to completing three of the six M.S. chemistry core courses (including CHEM 701) and CHEM 610, 698, 699, analytical chemistry track students, with the approval of their research advisor or the graduate program director, should select at least two courses from the advanced analytical series, CHEM 703, 704, 705, and 741. Students may select graduate course work which will provide background in their research topics.

Biochemistry Track. The biochemistry track prepares the student for excellent opportunities in industrial research, biomedical research, and continued graduate study at the doctoral level. The student will attain expertise in both qualitative and quantitative biochemical techniques using state-of-the-art instrumentation, develop skills and understanding of the interplay of biology and chemistry, and gain expertise in low-tech bulk processing in biofermentation, bioprocessing, biodetoxification and biofiltration mechanisms. As such, the biochemistry track also prepares the student for excellent opportunities in the food service industry. In addition to completing three of the six M.S. chemistry core courses (including CHEM 541 and 543) and CHEM 610, 698, and 699, biochemistry track students, with the approval of their research advisor or the graduate program director, should also take CHEM 542, 544, at least two 700-level biochemistry courses (6 hours), and four other graduate level electives (6 hours).

Clinical Chemistry Track. The clinical chemistry track provides students with background in human analytical biochemistry and the students’ research will normally involve a medically-related topic in this area. In addition to completing three of the six M.S. chemistry core courses (normally, these will include CHEM 541, 543, and 725) and CHEM 610, 698, and 699, clinical chemistry track students, with the approval of their research advisor or the graduate program director, should also take CHEM 631, 632, 669, 731, and one of the following: CHEM 715, 717, or 719.

Environmental Chemistry Track. The environmental chemistry track prepares students to deal with environmental problems from multiple perspectives and seek solutions through teamwork. In addition to completing three of the six M.S. chemistry core courses (including CHEM 748 and 749), and CHEM 610, 698, and 699, environmental chemistry track students, with the approval of their research advisor or the graduate program director, should select graduate course work which will provide background in their research topics. Chemistry students in the environmental sciences track of the accelerated BS/MS program should also complete BIOL 552, GEOE 610, STAT 542, attend the environmental sciences seminar series, and participate in a multidisciplinary environmental capstone research project.

Marine Chemistry Track. The marine chemistry track encourages students to view problems in our oceans and estuaries from multiple perspectives and seek solutions through teamwork. In addition to completing three of the six M.S. chemistry core courses, and CHEM 610, 698, and 699, marine chemistry track students, with the approval of their research advisor or the graduate program director, should select graduate course work which will provide background in their research topics. Chemistry students in the marine sciences track of the accelerated BS/MS program will also complete OCEN 604 or 651, 610 or 614, 611, 616, 620 or 514, and 640 or BIOL 515, attend the marine sciences seminar series, and participate in a multidisciplinary capstone research project.

Medicinal Chemistry Track. The medicinal chemistry track provides students interested in the drug field with the opportunity to become involved in unique research projects related to the design and synthesis of novel organic drugs. Opportunities exist for the students in the medicinal chemistry track to collaborate with the department of pharmacology at Old Dominion University.
Evansville in the testing of new drugs in a variety of areas. Students in the medicinal chemistry track will be prepared to seek positions with drug companies in sales or basic research and development. In addition to completing three of the six M.S. chemistry core courses (which includes CHEM 725 and may include CHEM 541 and 543) and CHEM 610, 698, and 699, medicinal chemistry track students will complete CHEM 726, and additional related courses such as CHEM 510, 705, 723, 727, 728, or BIMD 706.

Organic Chemistry Track. The organic chemistry track provides students with the opportunity to gain experience in modern synthetic techniques together with the use of state-of-the-art spectroscopic methods to identify organic compounds. Students may also choose from among research opportunities in a variety of areas including synthetic chemistry, drug chemistry, polymer chemistry, environmental chemistry and bioorganic chemistry. In addition to completing three of the six M.S. chemistry core courses (including CHEM 725), and CHEM 610, 698, and 699, organic chemistry track students will complete twelve hours in related courses such as CHEM 510, 705, 723, or 726.

Non-Thesis Option. No later than the end of their first academic year, students electing the non-thesis option are required to interview the chemistry graduate faculty and choose a graduate faculty independent study advisor. Non-thesis students and their independent study advisor will then agree upon an independent study project. Upon completion of their independent study project, non-thesis students must write a formal independent study report acceptable to their independent study advisor and the Graduate Studies Committee.

Comprehensive Examination. All students must pass an oral examination in their field of concentration. This examination will form part of the research thesis defense for research/thesis students, and part of the oral presentation of the independent study report for non-thesis students. This oral examination/evaluation will provide a measure or allow assessment of the student's chemical knowledge and/or capability.

In-Service Practicum. All students concentrating in clinical chemistry must take six credit hours of in-service work. This involves a minimum of 200 hours of work at a local clinical laboratory.

Master of Science in Education–Chemistry

Refer to the Darden College of Education section of this catalog.

COMPUTER SCIENCE

Kurt J. Maly, Chair
Janet Brunelle, Chief Departmental Advisor

The Department of Computer Science offers programs leading to the Bachelor of Science in Computer Science, Master of Science with a major in computer science, and Doctor of Philosophy with a major in computer science. The Department of Computer Science jointly offers two programs with the Department of Electrical and Computer Engineering in the College of Engineering and Technology: a Bachelor of Science in Computer Engineering and a Master of Science and Master of Engineering with a major in computer engineering. In addition, the Department of Computer Science offers a joint program with the Information Technology/Decision Sciences Department in the College of Business and Public Administration. This program leads to a Master of Science in computer science with a computer information sciences emphasis. The Computer Science Department also supports the computing technology emphasis of the engineering technology bachelor's degree.

Computer science traces its foundation to mathematics, logic and engineering. Studies in computer science range from theory through experimental techniques to engineering methodology. The computer science curriculum exposes students to aspects of each of these disciplines and fosters an appreciation and understanding of them. Students are exposed to the broad theoretical basis of computer science through lecture and laboratory experience. The laboratory experience is more than simple programming; it is through the laboratories that students are introduced to both the experimental and the design aspects of computer science.

The Computer Science Department has a unique curricular model that applies computer science education to the real world. The Professional Workforce Development courses (CS 410 and CS 411W) expand upon the experimental and design approach of typical computer science curricula by addressing the creativity and productivity required for business and industrial applications today. Students in CS 410 and 411W engage in projects that investigate each stage of transforming a creative idea into a productivity enhancing system in a realistic context. In addition, the Computer Science Department offers a set of professional development tracks: database administration, database application development methodology, network design and administration, and UNIX system administration. These tracks provide a basis for students to pursue career paths and the foundation for professional certification in these areas.

Bachelor of Science in Computer Science

The sample curricular plan provided below assumes the student has been certified by the mathematics placement examination as ready for calculus (MATH 211). Students who place lower than this should obtain an alternative sample plan from their computer science advisor.

FRESHMAN FIRST SEMESTER Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 150</td>
<td>Intro to Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 170</td>
<td>Fundamentals of Computer</td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td>3</td>
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<tr>
<td>MATH 211</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>ENGL 110C</td>
<td>English Comp I</td>
<td>3</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Computer Science</td>
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</tr>
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FRESHMAN SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</tr>
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<tbody>
<tr>
<td>CS 250</td>
<td>Problem Solving &amp; Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 252</td>
<td>Intro to UNIX for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>CS 270</td>
<td>Intro to Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MATH 212</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 111C/131C</td>
<td>English Comp II/Technical Writing</td>
<td>3</td>
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</table>

SOPHOMORE FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 361</td>
<td>Data Structure</td>
<td>3</td>
</tr>
<tr>
<td>CS 381</td>
<td>Discrete Structures</td>
<td>3</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Natural Science Perspective</td>
<td>4</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Oral Communication</td>
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SOPHOMORE SECOND SEMESTER

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CS 330</td>
<td>Object-Oriented Program Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 390</td>
<td>Intro to Theoretical Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Natural Science Perspective</td>
<td>4</td>
</tr>
<tr>
<td>STAT 330</td>
<td>Intro Probability and Statistics</td>
<td>3</td>
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<tr>
<td>GEN ED</td>
<td>Literature</td>
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JUNIOR FIRST SEMESTER

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<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 350</td>
<td>Intro to Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MATH 316</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>TECHNICAL ELECTIVE 1*</td>
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<td>3 or 4</td>
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<tr>
<td>CS ELECTIVE 1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Philosophy Perspective</td>
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JUNIOR SECOND SEMESTER

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 417</td>
<td>Computational Methods and Software</td>
<td>3</td>
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<tr>
<td>CS 500</td>
<td>Computers in Society</td>
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<tr>
<td>CS Elective 2</td>
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<tr>
<td>TECHNICAL ELECTIVE 2*</td>
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<tr>
<td>GEN ED</td>
<td>History Perspective</td>
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SENIOR FIRST SEMESTER

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<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 410</td>
<td>Professional Workforce Development I</td>
<td>3</td>
</tr>
<tr>
<td>CS Elective 3</td>
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<tr>
<td>CS 471</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>UPPER GEN ED Cluster 1</td>
<td></td>
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</tr>
<tr>
<td>GEN ED</td>
<td>Social Science Perspective</td>
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SENIOR SECOND SEMESTER

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<th>Course</th>
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<th>Credits</th>
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<tr>
<td>CS 411W</td>
<td>Professional Workforce Development II</td>
<td>3</td>
</tr>
<tr>
<td>CS Elective 4</td>
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<td>3</td>
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<tr>
<td>UPPER GEN ED Cluster 2</td>
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<td>3</td>
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<tr>
<td>UPPER GEN ED Cluster 3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Fine Arts Perspective</td>
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</tr>
</tbody>
</table>

Computer science majors must earn a grade of C or better in all CS courses to meet graduation requirements.

Requirements for graduation also include a minimum cumulative grade point average of 2.00 overall, 120 credit hours, passage of the Exit Examination of Writing Proficiency, completion of the Computer Science Exit Exam and the Senior Assessment. Additional hours may be required to meet the foreign language requirement.
Minor Program in Another Discipline

A minor in a discipline other than computer science is optional and may replace the upper-level general education cluster requirement. Business, mathematics, engineering, and engineering technology are the most common fields chosen by computer science majors. Minimal requirements for minors are the completion of 12 credit hours at the advanced level (300 and 400). Students must obtain approval and specific requirements from the minor department. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Cooperative Education

Computer science majors interested in gaining practical experience and on-the-job training while completing undergraduate or graduate degree requirements may find opportunities through participation in the Cooperative Education Program.

A student usually starts in the junior year working with an employer in a field of computer science on an alternating semester or parallel schedule. The alternating plan allows for semesters of full-time work separated by semesters of full-time study. The parallel plan allows for concurrent study and work. Students must apply for participation in the Cooperative Education Program through the Career Management Center prior to registering for Cooperative Education credit. All work experiences must be approved by Career Management and the academic department concerned.

Undergraduates can earn a maximum of six semester credits through cooperative education that apply toward degree requirements. For further information, see the Career Management section of this Catalog.

Professional Development Tracks

Database Administration with Oracle Software. This track was developed in cooperation with Oracle Corporation. It requires CS 450 Database Concepts as the first course and prepares students for roles in modern database environments. Key concepts, techniques and skills required for administering a state-of-the-art database platform are developed. The courses in this track include CS 450, 456 and 457.

Network and System Administration Tracks with CISCO and Solaris Technologies.

Network Design and Administration. This track is intended for students who wish to establish a career in network design and administration in either Local Area Network (LAN) or Wide Area Network (WAN) environments. Students will get hands-on experience in designing networks by configuring routers and switches and work with LAN and WAN routing protocols. This track includes coverage of the information required to take the CISCO CCNA and CCNP certification. Courses under this track are CS 454 Network Management and CS 464 Advanced Network Design.

UNIX System Administration. This track is intended for students who wish to either pursue a career in UNIX system administration or to complement their network design and administration skills. Students enrolled in this track will get extensive hands-on experience in installing, troubleshooting, and administering UNIX systems in a heterogeneous networked environment. This track includes coverage of the skills necessary to take the SOLARIS System Administration I & II certifications. The first course in this track is CS 458 UNIX System Administration.

Bachelor of Science in Computer Engineering

The computer engineering undergraduate degree program is designed to provide both a broad engineering background and comprehensive foundation in the technical principles underlying the computer area. Students develop a background through course work in mathematics, the basic sciences, and general engineering. The technical core consists of courses from electrical and computer engineering to address hardware aspects of computer engineering and course work from computer science to address software aspects. In addition, course work in General Education perspectives and communication skills is required to assure a well-rounded program of study. Specific degree requirements can be found listed under the Department of Electrical and Computer Engineering.

Due to limited laboratory facilities, admission to the computer engineering program is on a competitive basis. Students should apply to the Department of Electrical and Computer Engineering. Applications are reviewed and acceptances made each fall.

Bachelor of Science in Engineering Technology with an Emphasis in Computer Engineering Technology

The goal of the computer engineering technology program is to prepare students for employment in areas defined by the rapidly expanding opportunities of computer applications. With new hardware and software products being introduced monthly, students who wish to succeed in this field should develop a background in both software and hardware. This program provides such a background by combining a grounding in basic theory with hands-on, application courses selected from the disciplines of Computer Science and Electrical Engineering Technology. The curriculum emphasizes practical design and the utilization of systems and hardware. Areas of concentration include network design and management, modern communication systems, microcomputer systems and applications, and application program development. Specific degree requirements can be found listed under the Department of Engineering Technology.

Minor in Computer Science

The curriculum for the Bachelor of Science in Engineering Technology with an emphasis in computer technology curriculum contains a built-in minor in computer science. Those majoring in computer engineering may minor in computer science by taking a minimum of two additional three credit 400-level CS electives. Others may minor in computer science by taking CS 150, 250, 252, 361, and either 451 or 350 as well as two three-credit 400-level CS electives. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Computer Science Add-on Endorsement for Professional Education Licensure

A person licensed by the Commonwealth of Virginia to teach in secondary schools may add an endorsement for computer science by completing this program. This option is for secondary education teachers who are interested in teaching computer science. The required courses are CS 150, 170, 250, 252, 312, 355, 361, and 381 (24 credit hours).

Graduate Programs in Computer Science

Hussein Abdel-Wahab, Graduate Program Director

A graduate of the computer science program will have a broad fundamental knowledge of the field and in-depth knowledge in a particular
Master’s Degree—Computer Engineering Major

Entrance Requirements

An undergraduate degree in an ABET-accredited computer engineering program is an ideal preparation for the program, though students with degrees in either computer science or electrical engineering should be able to enter the program with very few deficiencies (typically no more than three courses) and are encouraged to apply.

Requirements

All students are required to take four core courses: CS 555, 665; ECE 544 and 642. Students must also take four electives from an approved list of computer science, electrical and computer engineering and mathematics courses with at least one selection from computer science and one selection from electrical and computer engineering. Each student must pass a written and/or oral comprehensive examination and a writing proficiency examination.

Master of Science

A minimum of 31 credits is required, including 24 credits of approved course work, six credits of research work, and one credit of colloquium. The candidate is required to prepare a thesis.

Master of Engineering

A minimum of 31 credits is required, including 30 credits of approved course work and one credit of colloquium.

Doctor of Philosophy—Computer Science

Requirements

A candidate for the doctoral degree in computer science must meet all of the following requirements in addition to the University requirements outlined under the Academic Information section in this Catalog.

1. Pass the diagnostic examination at the Ph.D. level.
2. Complete a minimum of 27 credit hours of course work beyond the master’s degree (or equivalent).
3. Pass the candidacy examination.
4. Complete the dissertation work of 24 credit hours or more.
5. Successfully defend the dissertation.

All requirements for the master’s degree must be completed within eight years after admission to the Ph.D. program.

Dissertation. A minimum of 24 credit hours of dissertation work is required. The work must represent an achievement in research and must be a significant contribution in the field.
Publication. Students are required to publish (or have in a revision process) at least one paper in a refereed journal or refereed conference proceedings based on their dissertation work.

Dissertation Defense. The examination will be oral and the examination committee must have completed the dissertation at least two weeks before the examination date. In addition to the defense, students are required to give a public oral presentation on their dissertation results.

Time Requirement. Ph.D. students should normally be full time. Students who wish to pursue their study on a part-time basis must spend at least two semesters on campus or at an off-campus facility engaged in full-time graduate study. A full-time student can be expected to satisfy all the Ph.D. requirements in three years when entering with an M.S. degree in computer science or four years with a baccalaureate degree in computer science. No student (full time or part time) will be allowed to study for the Ph.D. degree beyond eight years from the date of admission into the program.

For further details of the graduate program, please consult the Graduate Handbook of the Computer Science Department or contact the department.

Computing Facilities

The Computer Science Department has over 300 high-end workstations running Unix Solaris, Unix Linux, and Microsoft NT operating systems. These are connected via a high-speed switched network to powerful servers. Also the department operates an ORACLE Laboratory which supports the ORACLE Technical Initiative described earlier in this section, a hands-on lab for CISCO Lan/Wan Network configuration/troubleshooting, and a hands-on lab for Solaris operating system installation/troubleshooting.

MATHMATICS AND STATISTICS

J. Mark Dorrepaal, Chair
John E. Kroll, Chief Departmental Advisor

Bachelor of Science—Mathematics Major

The Department of Mathematics and Statistics offers a program of study consisting of three optional tracks, each of which leads to the degree of Bachelor of Science with a major in mathematics. In order to graduate from the program all students must complete the requirements of at least one of these tracks. The optional tracks enable students to emphasize studies in Applied Mathematics, Statistics/Biostatistics, or Mathematics for Secondary School Teachers. The track for secondary school teachers is intended for those who wish to pursue a career in teaching mathematics at the high school level and leads to teaching licensure in the Commonwealth of Virginia. The applied mathematics and statistics/biostatistics tracks are intended for those who wish to pursue graduate work in the mathematical or statistical sciences, or otherwise obtain employment in a mathematics or statistics-related field. Students in these tracks may also obtain teacher licensure by fulfilling the requirements of the Darden College of Education outlined under the teaching track. The requirements of each basic area along with the professional education courses needed for teacher licensure in the Commonwealth of Virginia are listed below.

In addition to the above Bachelor’s program, an accelerated five-year course of study which would result in both a baccalaureate and a master’s degree may be implemented. For additional information, please contact the graduate program director of the Department of Mathematics and Statistics.

Requirements

LOWER DIVISION GENERAL EDUCATION Credits
Composition 6
Oral Communication (met in the major by MATH 317) 3
Mathematics (MATH 162M-163) 6
Foreign Language 0-6
Computer Skills (requires CS 150) 4
Fine and Performing Arts 3

History 6
Literature 3
Philosophy (recommend PHIL 120P) 3
Natural Science and Technology 11-12

Eight credit hours of Natural Science with labs in sequence. Additionally, 3-4 credit hours of Natural Science or Technology are required. PHYS 231N-232N are advised for the applied Mathematics option; either BIOL 108N-109N or BIOL 115N-116N are advised for the statistics/biostatistics option.

Social Science 6

Mathematics Course Requirements

MATH 211 Calculus I 4
MATH 212 Calculus II 4
MATH 307 Ordinary Differential Equations 3
MATH 311 Modern Algebra I (writing intensive) 3
MATH 312 Calculus III 4
MATH 316 Introductory Linear Algebra 3
MATH 317 Calculus IV: Introductory Analysis 3
STAT 310W or 431 Intro Data Analysis or Theory of Statistics

(statistics/biostatistics majors take both) 3
STAT 330 or 331 Intro Probability and Statistics or Theory of Probability (statistics/biostatistics majors take STAT 331) 3

A grade of C+ or higher is required in the courses listed above. All students are required to choose one of the following options:

Applied Mathematics
MATH 401 Partial Differential Equations 3
MATH 408 Applied Numerical Methods I 3
MATH 422 Applied Complex Variables 3
MATH 400-level electives (at most three hours from MATH 400, 404, 406, 457) 9

Statistics/Biostatistics
STAT 310W or 431 Intro Data Analysis or Theory of Statistics 3
STAT 405 SAS: An Introduction to Data Handling 1
STAT 400-level electives 15

Math Teaching Licensure

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, no grade less than a C- in the Math/Statistics content area and the professional education core, and a passing score on PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, a passing PRAXIS I score or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

The PRAXIS II Mathematics Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application. The Department of Mathematics and Statistics will offer a one-credit course each semester to assist students in preparing for the PRAXIS II Math Content Exam. Please consult the department for details.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education website or the Office of Teacher Education Services and Advising, Education 152.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 134 credit hours. Passage of the PRAXIS II exam is required for teacher education licensure.

MATH 400 History of Mathematics 3
MATH 404 Fundamental Concepts of Geometry 3
MATH 406 Number Theory 3
MATH 417 or 422 Inter Real Analysis or Applied Complex Variables 3
MATH 400-level electives 6

**Professional Education core:**

- ECI 301 Social and Cultural Foundations 3
- ECI 304 Educational Applications of Technology 3
- ECI 360 Classroom Management and Discipline 2
- ECI 408 Reading and Writing in Content Area 3
- ECI 453 Developing Instructional Strategies: Math 4
- ECI 485 Student Teaching 12
- ESSE 406 The Special Needs Student 3
- ESSE 413 Human Growth and Development 3

**UPPER DIVISION GENERAL EDUCATION**

**Option A.** Approved Minor, 12-24 hours; second degree or second major. (Professional Education core satisfies this requirement.)

**Option B.** Cluster, 9 hours (3 hours may be in the major area of study.)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of the Senior Assessment.

**Practicum**

Any student who wishes to receive a practicum or internship experience may do so as an integral part of the degree program. Students in the secondary school teacher track are required to complete both a practicum and a student teaching internship as part of the degree requirements. Otherwise, students may substitute the practicum experience for one of the optional courses listed in the other two tracks.

**Minor in Mathematics**

Students may pursue a minor in mathematics with an emphasis in one of the three following areas: applied mathematics, statistics/biostatistics or actuarial mathematics.

- The applied mathematics option consists of MATH 307, 312, 317 and two courses chosen from MATH 316, 401, 408, 409, 417, 420, 421, 422, 424, 427, 428, 457, or approved topics courses.
- The statistics/biostatistics option consists of 12 hours of statistics at the 300/400 level, of which at most six hours can be at the 300 level.
- STAT 306 cannot be applied to this option.
- The actuarial mathematics option consists of MATH 312, 316, STAT 331 and either MATH 408 or STAT 431.

At least twelve credit hours in the chosen option must be taken through courses offered by Old Dominion University. Students must have an overall grade point average of at least 2.00 in the courses taken in their chosen option to qualify for a minor.

**Advanced Placement**

Students who have achieved a qualifying score on the Calculus AB or Calculus BC advanced placement examinations receive credit for MATH 211 (and MATH 162M and 163). Credit for MATH 162M and 163 is also given for qualifying scores on the placement tests administered by the University Testing Center. Refer to the Academic Testing and the Experiential Learning Credit Options at the Undergraduate Level sections of this Catalog. Advanced placement credit is not available for MATH 102M.

**Graduate Study in Computational and Applied Mathematics**

Glenn Lasseigne, Graduate Program Director

The master's and doctoral programs in computational and applied mathematics offered by the Department of Mathematics and Statistics are designed to produce applied mathematicians and statisticians who can meet the growing demand for analytical and computational skills in traditional scientific and multi-disciplinary fields. Students in the program can choose to pursue an option in either applied mathematics or statistics/biostatistics.

Applied mathematics is the application of mathematics to the solution of non-mathematical problems. Such problems may originate in mathematics (physics, chemistry, and engineering) as well as in such areas as geology, oceanography, meteorology, biology, ecology, environmental health, economics, actuarial science, business (operations and market research), banking, and medicine. Students will learn to use methods of applied mathematics, probability, statistics, biostatistics, numerical analysis, and scientific computing in seeking solutions to such problems. For work in computational and applied mathematics, training in an additional field of application is a necessity.

The desire and ability to use mathematics to bring together various disciplines is the unique characteristic of an applied mathematician. Not only has mathematical modeling and solving of societal and scientific problems increased the demand for applied mathematicians, but the flexibility and breadth of knowledge inherent in this discipline make it attractive for those who do not want to become irreversibly specialized.

Old Dominion University is one of the few American institutions offering a program expressly in applied mathematics. There are approximately 22 graduate program faculty members in the Department of Mathematics and Statistics, and current enrollment in the program is about 50 students. Areas of faculty research include analytical and numerical modeling in oceanography and meteorology, computational fluid dynamics and stability theory, elasticity and fracture mechanics, combustion theory, magnetohydrodynamics, mathematical biology, numerical analysis and approximation, optimization, applied probability, statistical inference, design of experiments, reliability, multivariate statistics, biostatistics, nonparametric statistics, bioinformatics, and high performance computing.

Facilities within the metropolitan area include the NASA/Langley Research Center, the Virginia Modeling, Analysis and Simulation Center (VMASC), and the Eastern Virginia Medical School.

**Program Financial Aid.** Graduate assistantships in the Department of Mathematics and Statistics offer stipends ranging from $9000 to $15,000. The level of award is determined on the basis of previous experience and performance as a graduate assistant and on the student's academic achievement and potential in applied mathematics or statistics. In addition, a number of teaching and research positions are available for financial support of graduate assistants during the summer months (June and July).

**Writing Proficiency.** All students in computational and applied mathematics are expected to demonstrate an acceptable level of writing ability. Writing samples provided in the first 15 hours of core course work will be evaluated by the faculty. Students needing help to remedy their writing deficiencies will be referred to the Writing Center for diagnosis and assistance.

**Master of Science–Computational and Applied Mathematics**

**Admission**

An applicant to the master's program in computational and applied mathematics should have a bachelor's degree in mathematics, statistics, computer science, or an application area with a strong mathematics component (e.g., physics or engineering). Undergraduate mathematics preparation should include course work in linear algebra, advanced calculus, differential equations, probability, and numerical methods. Undergraduate averages of 2.80 overall (4.00 scale) and 3.00 in the major and related mathematics courses are required.

A student who does not fully meet all requirements for admission as a regular graduate student may be allowed, with permission of the program director, to enroll as a provisional graduate student. Students lacking adequate preparation will be required to make up their deficiencies by taking appropriate undergraduate courses in addition to those specified for the master's program.

A formal application form, official transcripts and two letters of recommendation should be forwarded to the Office of Admissions. It is recommended that applicants supply Graduate Record Examination aptitude scores.

The following material should be mailed directly to the director of the graduate program in computational and applied mathematics, Department of Mathematics and Statistics: a list of all mathematics courses taken and other courses closely allied to the applicant's primary interests in applied math or statistics along with the texts used (titles and authors), chapters studied or topics covered, and grades. This information should be enclosed with the financial aid application (if the applicant is submitting one).

Students may enroll in the program on either a full-time or part-time basis. Courses are offered on a regular basis during the late afternoon and early evening hours, which allows part-time students to obtain master's degrees or post-master's graduate credit.

COLLEGE OF SCIENCES 231
Requirements
The M.S. candidate must complete a minimum of 30 credit hours of course work designed to fulfill an option in either applied mathematics or statistics or biostatistics. With approval of the graduate program director, up to six of these credits may be chosen from a field of application (e.g., geology, oceanography, ecosystem analysis, computer science, economics, health sciences, operations research, physics and engineering mechanics) in which the student applies analytical and numerical techniques to another discipline. A master's thesis is not required.

All programs of study must be approved by the graduate program director, and substitutions may be made only with his or her approval. Each student in the Applied Mathematics Option must pass a written examination based upon core material. A detailed examination syllabus will be provided to each student. All full-time master's-level students in the Applied Mathematics Option must take the examination in January of the second year of graduate study. The examination will also serve as a Ph.D. preliminary examination. Results of the examination will be an important factor in departmental decisions regarding admission to the Ph.D. program with financial support.

Colloquium Requirement. The Richard F. Barry Colloquium Series is run by the department on a weekly basis throughout the academic year. In order to develop an appreciation for the breadth of contemporary research in applied mathematics and statistics, all M.S. candidates will attend and succinctly summarize and evaluate in writing at least eight professional seminars given by research faculty or external seminar visitors.

Prerequisites. Prerequisite courses for the Applied Mathematics option are MATH 501, 508, 509, 517, 518 and 522. At most, three of these can be applied towards the 30-credit degree requirement. Prerequisite courses for the Statistics and Biostatistics options are options MATH 531, 532, 535 and 537. Only STAT 535 and 537 can be applied towards the 30-credit degree requirement.

Applied Mathematics Option. Students are required to take MATH 618, 637, 693, one of MATH 622 or 721, and 18 additional credit hours of approved graduate course work.

Biostatistics Option. In this option, the required core courses are STAT 505, 540, 550, 625, 626, 627 or 628, 640, and two 600-level courses from either the College of Health Sciences or the Eastern Virginia Medical School offerings in Epidemiology, Community Health, or History of Diseases and three hours of approved electives. Also required is a modeling project, STAT 632, carried out at Eastern Virginia Medical School or any other institute actively engaged in health sciences research, involving the use of statistical techniques in real-life settings. The student must defend his or her master's project by presenting his or her findings at a seminar.

Statistics Option. In this option, the required courses are STAT 505, 625, 626, 627, 628, 632, 640 and 12 additional credits of approved graduate course work.

Master of Science in Education—Mathematics

Doctor of Philosophy—Computational and Applied Mathematics

Admission
Applicants who appear to be qualified for study at an advanced graduate level may be admitted to the doctoral program in computational and applied mathematics. These will be students with very strong backgrounds in mathematics, statistics, computer science, or application areas with a mathematics component (e.g., physics or engineering).

Students may be admitted directly to the Ph.D. program with either a bachelor's or a master's degree. A grade point average of 3.00 (4.00 scale) in the major and related mathematics courses is required.

Students are required to submit three letters of recommendation and, if the student will not have completed a master's degree by the intended date of admission, GRE aptitude scores.

Requirements
Course Requirements. A minimum of 54 credit hours of course work beyond the bachelor's degree (24 credit hours beyond the master's degree) and exclusive of doctoral dissertation work is required. Each student will be assigned a guidance committee, and together they will plan a complete program of course work designed to meet the student's objectives and to fulfill an option in applied mathematics or statistics/biostatistics. The student is strongly encouraged to select courses in more than one of these option areas and in a field of application whenever such courses contribute appropriately to his or her program. Each program, however, must be directed and approved by the student's guidance committee.

While the individual program will depend on the nature of the student's preparation prior to entering, each participant will ordinarily be required to complete one of the following options:

Applied Mathematics Option. The required courses are MATH 605, 618, 622, 637, 638, 693, 817: one of the sequences MATH 801-802 or 803-804; and one of the sequences MATH 821-822 or 823-824.

Statistics/Biostatistics Option. The required core courses are: MATH 517, STAT 550, 625, 626, 627, 630, 640, 827, 828, and 897. Students who wish to concentrate in Biostatistics must take STAT 540 and at least nine credits at the 700-level from either the College of Health Sciences or the Eastern Virginia Medical School offerings in Epidemiology, Community Health, or History of Diseases.

Colloquium Requirement. The Richard F. Barry Colloquium Series is run by the department on a weekly basis throughout the academic year. In order to develop an appreciation for the breadth of contemporary research in applied mathematics and statistics, all Ph.D. candidates will attend and succinctly summarize and evaluate in writing at least 16 professional seminars given by research faculty or external seminar visitors.

Research Skills. Students are required to achieve proficiency at the advanced graduate level in either mathematics or statistics. This proficiency is validated by passing the Admission to Candidacy Examination.

Dissertation. A doctoral dissertation representing an achievement in research and a significant contribution to the field is required. Students must register for Research 889 or 889 each semester in which they are doing substantial work on their dissertations. A minimum of 24 hours of such research credit is required.

OCEAN, EARTH, AND ATMOSPHERIC SCIENCES

Richard Zimmerman, Chair
Ronald Johnson, Chief Departmental Advisor

The Department of Ocean, Earth and Atmospheric Sciences offers an undergraduate major in ocean and earth science. Undergraduate majors select one of five emphases: (1) biological oceanography, (2) chemical oceanography, (3) physical oceanography, (4) geology, earth science education, (5) geology. Students are required to complete one of the following options: (1) the Master of Science in oceanography, the Master of Science in geology, and the Doctor of Philosophy in oceanography; (2) the Master of Science in geology and the Doctor of Philosophy in oceanography. Students who choose the latter option have both thesis and non-thesis options. Areas of emphasis in oceanography are biological oceanography, chemical oceanography, geological oceanography, and physical oceanography. Interdisciplinary studies are en-
couraged. The curriculum is designed to prepare graduates for professional practice in their area of interest.

Accelerated track programs in marine sciences/oceanography and in environmental sciences provide students the chance to complete both a bachelor’s and master’s degree in five years. Students who are accepted into the program will work toward a B.S. in ocean and earth science, biology, or chemistry by taking a full schedule of courses each semester and summer. Graduate courses will begin during the fourth year and continue through the summer of the fifth year. Students planning to work with marine systems will move into the master’s in oceanography program in one of the four oceanography sub-disciplines. Ocean and earth science students with strong interests in terrestrial systems could enter the master’s in geology program.

Both the environmental sciences and the marine science/oceanography programs take a holistic approach to solving scientific problems by emphasizing the relationships among geological, chemical, physical and biological systems in the global environment.

The department receives considerable support from the Commonwealth and local philanthropic sources, as well as from private industry and area citizens. Establishment of the Virginia Graduate Marine Science consortium by the General Assembly in 1979 demonstrated the Commonwealth’s determination to achieve excellence in marine science. The purpose of the consortium is to advance marine science instruction, research, training, and advisory services and to enhance Virginia’s position in seeking funding to carry out these activities. Charter members of the consortium are Old Dominion University, the University of Virginia, Virginia Polytechnic Institute and State University, and the College of William and Mary. The Samuel L. and Fay M. Slover endowment to Old Dominion University in 1986 has significantly accelerated the program of marine studies. In 1991, a Center for Coastal Physical Oceanography (CCPO) was established at Old Dominion University by the Commonwealth of Virginia. The center is a Designated Center for Excellence.

The Department of Ocean, Earth, and Atmospheric Sciences is housed in two buildings. The Oceanography/Physical Sciences Building contains state-of-the-art teaching laboratories, computer facilities, and research laboratories for geology and biological, chemical and geological oceanography. The Center for Coastal Physical Oceanography is located in a building near campus and houses all of the department’s physical oceanography laboratories. The department maintains a 55-foot research vessel, the R/V Fay Slover, primarily for estuarine and coastal studies. In addition to the Slover, the department has a number of small boats, suitable for near shore investigations. The department also has a Coastal Bay & Barrier Island Program (CoBBI) located on Virginia’s Eastern Shore at the Virginia National Wildlife Refuge. This Field Station is outfitted to accommodate 2-4 scientists for overnight stays.

Bachelor of Science—Ocean and Earth Science Major

R.E. Johnson, Advisor

Students in the ocean and earth science program focus on global systems that control environmental conditions on the planet. They also learn to develop solutions to complex environmental problems by working in interdisciplinary teams. All majors in the department complete courses in the basic sciences and mathematics, core courses in earth sciences system, and a capstone field research experience. In addition, students complete a suite of specialty courses according to one of the following emphases.

Oceanography Emphasis

The oceanography emphasis is designed for students considering graduate work or employment in the pure and applied fields of oceanography. Students select specialty courses in biological oceanography, chemical oceanography, or physical oceanography. If students select the biological subdiscipline, they are strongly encouraged to minor in biology and select 12 credits from 300/400 level biology courses. If students select the chemical subdiscipline, they are strongly encouraged to minor in chemistry and select CHEM 311-313, 312-314, 321, and 322. If students select the physical subdiscipline, they are strongly encouraged to minor in applied mathematics and select MATH 312, 316, 317, and 401.

Geology Emphasis

The geology emphasis is designed for students with a wide range of professional goals in the sciences, engineering, business, and the arts. Students considering graduate work or employment in pure and applied fields of geology, including environmental geology, geological oceanography, hydrogeology, geophysics, and geochemistry, should build their backgrounds to support certification as a professional geologist (see later information). Students with a strong interest in geological applications of geographic information systems (GIS) and remote sensing tools should consider the geology emphasis with a minor in geography; the certificate program in spatial analysis of coastal environments (see later description) also emphasizes this area of study.

Earth Science Education Emphasis

The earth science education endorsement option is designed for students preparing to teach earth science in secondary schools. This program meets the requirements for teacher licensure in Virginia.

Requirements for all Emphasis Areas

<table>
<thead>
<tr>
<th>LOWER DIVISION GENERAL EDUCATION</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication (satisfied by OCEN 442)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (requires MATH 162M or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>0-6</td>
</tr>
<tr>
<td>Computer Skill (requires CS 149D or higher; satisfied by ECI 304 for earth science education track)</td>
<td>3</td>
</tr>
<tr>
<td>Fine and Performing Arts</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>6</td>
</tr>
<tr>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science and Technology (CHEM 115N-116N required)</td>
<td>8</td>
</tr>
<tr>
<td>Additionally, 3-4 credit hours of natural science and technology are met in the major.</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>6</td>
</tr>
</tbody>
</table>

Students must select one of the following options:

Course Requirements – Biological Oceanography Emphasis

| BIOL 115N-116N General Biology I-II | 8 |
| CHEM 115N-116N College Chemistry (satisfies natural science perspective) | 8 |
| CS 149D Elements of Computer Science (satisfies computer skills requirement) | 3 |
| GEOL 111N Physical Geology | 4 |
| MATH 211-212 Intro Calculus | 8 |
| OCEN 306 Oceanography | 3 |
| PHYS 231N-232N University Physics | 8 |
| STAT 330 Intro to Probability and Statistics | 3 |
| OCEN 310 Global Earth Systems | 3 |
| OCEN 440 Biological Oceanography Lecture/Lab | 4 |
| BIOL 203 Evolution 3 | |
| BIOL 415 Marine Ecology | 3 |
| CHEM 311, 312, 313 Organic Chemistry Lecture and Lab | 8 |
| CHEM 445 Biochemistry | 3 |
| OCEN 403W Aquatic Pollution | 3 |
| Elective (from GEOL 420, OCEN 404, 410, 412, 414, STAT 310W) | 3 |
| OCEN 441-442 Ocean and Earth Science Field Study I-II (OCEN 442 satisfies oral communication requirement) | 6 |

Course Requirements – Chemical Oceanography Emphasis

| BIOL 115N-116N General Biology I-II | 8 |
| CHEM 115N-116N College Chemistry (satisfies natural science perspective) | 8 |
| CS 149D Elements of Computer Science (satisfies computer skills requirement) | 3 |
| GEOL 111N Physical Geology | 4 |
| MATH 211-212 Intro Calculus | 8 |
| OCEN 306 Oceanography | 3 |
| PHYS 231N-232N University Physics | 8 |
| STAT 330 Intro to Probability and Statistics | 3 |
| OCEN 310 Global Earth Systems | 3 |
| OCEN 410 Chemical Oceanography Lecture/Lab | 4 |
| CHEM 311/313 Organic Chemistry Lecture | 6 |
| CHEM 331/333 Physical Chemistry Lecture | 6 |
| CHEM 332 Experimental Physical Chemistry or 452 Inorganic Chemistry Laboratory | 2 |
| CHEM 451 Advanced Inorganic Chemistry | 3 |

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Course Requirements – Physical Oceanography Emphasis
BIOL 115N-116N General Biology I-II 8
CHEM 115N-116N College Chemistry 8
(Satisfies natural science perspective) 8
CS 149D Elements of Computer Science 3
(Geology emphasis) 3
GEOL 111N Physical Geology 4
MATH 211-212 Calculus I-II 8
PHYS 231N-232N University Physics 8
STAT 330 Intro to Probability and Statistics 3
OCEN 306 Oceanography 3
OCEN 310 Global Earth Systems 3
OCEN 405 Physical Oceanography 3
OCEN 415 Waves and Tides 3
OCEN 451W Data Collection and Analysis in Oceanography 3
OCEN 452 Geophysical Fluid Dynamics 3
MATH 307 (280) Ordinary Differential Equations 3
ME 303 Mechanics of Fluids 3
ME 311 Thermodynamics I 3
PHYS 319 Analytical Mechanics 3
STAT 437 Regression and Analysis of Variance 3
OCEN 441-442 Ocean and Earth Science Field Study I-II (OCEN 442 satisfies oral communication requirement) 6

Course Requirements – Geology Emphasis
BIOL 115N General Biology I 4
BIOL 116N General Biology II or GEOL 303 Paleontology 3-4
CHEM 115N-116N College Chemistry (satisfies natural science perspective) 8
CS 149D Elements of Computer Science (satisfies computer skills requirement) 3
GEOL 111N-112N Physical Geology-Historical Geology 8
MATH 205-206 Intro Calculus 6
PHYS 231N-232N University Physics 8
STAT 330 Intro to Probability and Statistics 3
OCEN 306 Oceanography 3
OCEN 310 Global Earth Systems 3
GEOL 313 Mineralogy 3
GEOL 314 Petrology 3
GEOL 344W Geomorphology 3
GEOL 320 Sedimentology/Stratigraphy 3
GEOL 411 Structural Geology 4
GEOL 420 Hydrogeology OR
GEOL 434 Introduction to Geophysical Methods 3
GEOL/OCEN electives (from GEOL 303, 340, 368, 408, 414, 420, 431, 434, 435, 446, 450; OCEN 403W, 412, 414, 415, 419, 436, 452) (OCEN 442 satisfies oral communication requirement) 6
OCEN 441-442 Ocean and Earth Science Field Study I-II (OCEN 442 satisfies oral communication requirement) 6

Course Requirements – Earth Science Education Emphasis
Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than C- in the content area and the professional education core and have passed PRAXIS I or have achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file in the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses on developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain an overall grade point average of 2.75 in the academic major and complete all degree requirements for the major and the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education web site or the Office of Teacher Education Services and Advising. Education 152. The PRAXIS II Earth Science Content Examination must be passed before the candidate may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major and professional education core; and completion of a minimum of 127 hours.

The curriculum is as follows:
BIOL 115N General Biology I 4
CHEM 115N-116N College Chemistry (satisfies natural science perspective) 8
MATH 163 Pre-calculus II 3
PHYS 111N-112N Intro General Physics 8
GEOL 111N Physical Geology 4
GEOL 112 Historical Geology 4
OCEN 306 Oceanography 3
OCEN 310 Global Earth Systems 3
GEOL 303 Paleontology 3
GEOL 313 Mineralogy 3
GEOL 314 Petrology 3
GEOL 344W Geomorphology 3
GEOL 360 Environmental Systems Education (satisfies oral communication requirement) 3
GEOL 442 General Meteorology 3
PHYS 408 Astronomy for Teachers 3
OCEN 441-442 Ocean and Earth Science Field Study I-II (OCEN 442 satisfies oral communication requirement) 6

Professional Education Courses
ECI 301 Social Cultural Foundations of Education 3
ECI 304 Educational Applications of Computers (satisfies computer skills requirement) 3
ECI 360 Classroom Management and Discipline 2
ECI 408 Reading and Writing in Content Areas 3
ECI 454 Developing Instructional Strategies: Science 4
ECI 485 Student Teaching 12
ESSE 406 Special Needs Students – General Ed 3
ESSE 413 Fundamentals-Human Growth and Development 3

UPPER DIVISION GENERAL EDUCATION
Completion of the professional education courses for earth science majors satisfies this requirement.

Option A. Approved minor 12-24 hours; also second degree or second major. Students completing an oceanography emphasis should see the information in the emphasis areas encouraging them to complete specific minor requirements.

Option B. Cluster, 9 hours.

Requirements for graduation in all options listed above except earth science education include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment. Requirements for earth science are noted under course requirements for earth science education earlier in this section.

Practicum Experiences
Geology and earth science students have the chance to participate in a practicum—a hands-on course-length experience that closely ties their classroom learning with “real life.” Earth science education track students must complete ECI 485 which places them in science classrooms in secondary schools. Geology track students can (a) complete a field course (three credits or more) instead of Field Methods (GEOL 450), or (b) complete an internship (GEOL 368) with a municipal, state, or federal government agency, a non-governmental organization, or a business. In addition, Honors students may develop a senior research project in GEOL 487.

Honors Program in Ocean and Earth Science
Students admitted by the faculty to the ocean and earth science honors program engage in supervised individual study in areas of their interest. Honors students must complete all courses required by the department with a minimum grade point average of 3.50 and a total of at least three credits in GEOL 487, 488 or OCEN 497.
Professional Geologist Certification

Ocean and earth science graduates who work for several years as geologists and then pass a national standardized test can be certified as a Professional Geologist by the Commonwealth of Virginia or other states. The standardized tests commonly cover the following topics (listed in order of emphasis on the test): Research, Field Methods, and Communications; Structural Geology; Hydrogeology; Sedimentology/Stratigraphy; Petrology; Geomorphology; Engineering Geology; Mineralogy; Geophysics; Paleontology; Geochemistry; Mining Geology; and Petroleum Geology.

Credit by Examination

Students with prior training or experience may receive credit for three hours of GEOI 111N by passing the DANTES Physical Geology exam. Both tests are administered by the Testing Center. Because GEOI 111N is a four credit course students must also complete a physical geology laboratory course (one credit) in order to use this advanced placement credit. Interested students should contact the program director of geological sciences about this course. Students may also refer to the Policy on Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

Minor in Geology

R.E. Johnson, Advisor

Requirements for a minor in geology are as follows: GEOI 110N-112N or 111N-112N, plus a minimum requirement of 12 credits hours at the 300 and 400 levels in geology with the chair's approval. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Minor in Oceanography

R.E. Johnson, Minor Advisor

Juniors and seniors who are declared majors in biology, chemistry, computer science, geology, engineering, mathematics, or physics are eligible to enter the minor in oceanography program. Students with majors in other disciplines should consult the minor advisor before applying to the program. Applicants for the oceanography minor must have already declared their major and have a minimum GPA of 2.00. Twelve hours of oceanography courses at the junior/senior level are required to complete the minor. The minor curriculum consists of OCEN 306 and a choice of three additional oceanography courses that can be selected in consultation with, and approval by, the minor advisor. For completion of the minor a student must also have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Certificate in Spatial Analysis of Coastal Environments (Undergraduate and Graduate)

The certificate in spatial analysis of coastal environments provides an interdisciplinary program for students wishing to pursue careers in coastal management or research, remote sensing, or geographic information systems (GIS) applications. Rendered upon completion of the requirements, the certificate is an academic affidavit comprised of courses in geography and oceanography and is administered by the two departments. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to postgraduate professionals who meet the requirements. Students with comparable professional experience may be able to show competence in selected courses through examination.

Students seeking undergraduate certification complete the 400-level courses, and those seeking graduate certification complete the 500-level courses.

I. Core Courses: GEOG 404/504 and OCEN 414/514 (six credits)
II. Interpretive Analysis Courses: Select two three-credit courses from the following: GEOG 402/502, OCEN 436/536, GEOG 422/522, GEOG 490/590, OCEN 495/595, or GEOG 495/595 (six credits)
III. Capstone Seminar: GEOG/OCEN 419/519 (three credits)

Graduate Degrees

The department grants a Master of Science in geology as well as a Master of Science and Doctor of Philosophy in oceanography. Scores on the GRE verbal, analytical, and quantitative sections are required. Official transcripts, letters of recommendation, TOEFL scores (international students), and a statement of goals and interest for graduate study in geology or oceanography should all be submitted to the Office of Admissions by February 1 for full consideration.

Master of Science–Geology

David J. Burdge, Graduate Program Director

The Master of Science degree in geology is planned for discontinuation. It is planned that the program will be merged with the Master of Science in oceanography. No new applicants for admission are being accepted for the geology program.

Admission

Students may be admitted on either a full- or part-time basis. Official transcripts, two letters of recommendation, general GRE scores, and a baccalaureate degree in the physical sciences, mathematics, computing science, or engineering from an accredited institution are required. In order to qualify for regular student status, the student ordinarily will have a cumulative GPA of 3.00 (4.0 scale) in the major and the approval of the departmental graduate admission committee. Students will also be required to meet certain other prerequisites; consequently, a background in calculus, statistics, and computer programming is desirable. Students with undergraduate backgrounds in physical sciences other than geology may require some additional preparation prior to admission as regular students. Those students who do not meet all the requirements for admission as regular students may be admitted conditionally to course work as provisional students. Of particular importance to geology students is field experience, and provisional students must take a geology field camp if they have never done so.

A student's writing proficiency will be evaluated by the Writing Center. Students not demonstrating writing proficiency will be expected to complete remedial courses through the Writing Center.

Requirements

General. The student must satisfy the various degree requirements established by the University.

Options. The student may pursue either a thesis program or a non-thesis program. The non-thesis program consists of a minimum of 30 semester hours of graduate study, including thesis and research credit hours. The non-thesis program consists of at least 31 semester hours of graduate work and the successful completion of a comprehensive examination. The student's program of study must have the advance approval of the graduate advisor and the graduate program director. The student is encouraged to consult with the graduate program advisor in all matters concerning graduate work.

Course Requirements. All students are required to register for one credit hour of graduate seminar and to participate in this seminar each semester. In addition, students are required to complete (or show proficiency in) GEOI 514, 520, 531, 644, and 650.

Research and Thesis. A student electing the thesis option must satisfactorily complete a research project and a resulting written thesis under the supervision of the research advisor. A non-thesis option student must complete three hours of directed research and submit a report on that research.

Comprehensive Examination. A student pursuing the non-thesis option must pass a comprehensive examination. The examination will cover the main areas of geology as appropriate and is offered once each semester if needed. The examination may not be taken more than twice.

A student pursuing the thesis option will not be required to take the comprehensive written examination, but must pass a final oral comprehensive examination covering an area of specialization and closely related topics. The examination will be given by a faculty committee appointed by the graduate program director in concert with the student's graduate advisor.

Environmental Sciences Option. The environmental sciences option encourages students to view environmental problems from multiple
perspectives and seek solutions through teamwork. Geology students taking this option will complete BIOL 552, CHEM 749, GEOL 610, STAT 542, attend the environmental and marine sciences seminar series, and participate in a multidisciplinary capstone research project.

**Special Option.** Students are permitted to take up to nine semester credits in courses outside the department as long as they relate to the major emphasis. However, the master’s program is designed to be applicable to contemporary environmental problems as well as geologic problems, and is flexible enough to permit students to develop specific education objectives that serve individual career goals. For example, students who wish to focus on marine geology may elect to take up to 15 credit hours in pertinent oceanography subjects; students specializing in geophysics or geochemistry may take a corresponding number of pertinent physics or chemistry courses; applied geology students could select a supporting engineering curriculum; and those interested in scientific management could choose a selection of pertinent courses from business administration.

**Master of Science—Oceanography**

David J. Burdige, Graduate Program Director

**Admission**

Applicants who have obtained a bachelor’s degree in a science (e.g., biology, chemistry, geology, physics), mathematics, or engineering, with a minimum 3.00 grade point average in their major and a 2.80 overall grade point average, are eligible for regular admission to the oceanography program. At least one semester of calculus is also required. Oceanography is an interdisciplinary science; consequently, it is expected that applicants have science courses outside their major.

For students wishing to study geological oceanography, an undergraduate major in geology is required. Students wishing to study physical oceanography should have majored in physics, mathematics, engineering, computer science, meteorology or related physical sciences. Such applicants must have completed 36 hours in one of these fields and completed mathematics through partial differential equations.

An applicant who does not meet all requirements for admission as a regular graduate student may be admitted as a provisional graduate student. Students lacking adequate preparation for the program may make up deficiencies by taking appropriate undergraduate courses.

**Requirements**

The student shall meet all University requirements for graduate degrees outlined in the Requirements for Graduate Degree section in this Catalog. This includes at least 30 hours of graduate study, demonstration of competency in oral communications and demonstration of proficiency in technical writing. A maximum of 12 hours of credit may be transferred into a graduate degree program from non-degree status at Old Dominion University or from another accredited institution, except in the case of an approved interinstitutional program.

The department offers thesis and non-thesis options for the Master of Science degree.

**Course Distribution.** A minimum of 12 hours of basic course work in the four sub-disciplines of oceanography is required of all M.S. students. This core program consists of OCEN 604, 610, 620, and 640. A student must achieve a grade of B or better in each of the core courses. The remaining 18 credits are chosen from a list of approved graduate courses (or graduate courses and research hours for thesis option students). At least 60 percent of all courses must be at the 600 level or above. For the non-thesis option, up to three hours of research may be used to meet course requirements. For the thesis option, up to six hours of research may be used to meet the course requirements.

**Non-Thesis Option.** For the non-thesis option, the student will demonstrate competency in oral communications by successfully completing OCEN 691 (1 credit). Proficiency in writing may be established by presenting for evaluation either a professional paper or technical report prepared by the student or a report on a current area of research in oceanography. This document must be approved by the student’s advisor and the graduate program director. A student in the non-thesis program must pass a written comprehensive examination testing breadth of knowledge in oceanography. The examination is given twice yearly, normally in October and March. The examination grades are fail, pass, or pass with distinction. A student who has failed the examination may take it again only once.

**Thesis Option.** Before a student embarks on thesis research, a thesis advisory committee must be formed. Further information on University guidelines for forming this committee can be found in the Requirements for Graduate Degrees section of this Catalog. The student must also submit a thesis proposal which outlines the research to be undertaken and identifies the resources required for completion of the research. Guidelines for the preparation of the thesis proposal are available from the graduate program director. Any student whose thesis research requires departmental funding must obtain prior approval from the department chair and graduate program director. No funds will be given without this approval. The thesis proposal requires the approval of the graduate program director, the department chair, and the student’s thesis advisory committee. As part of the thesis requirement, the student is required to present a public defense of the research. The public defense and approval of the thesis by the student’s Thesis Committee meet the requirements for demonstration of competency in oral communication and demonstration of proficiency in technical writing; this also satisfies the comprehensive examination requirement.

Students in the thesis program should consult the graduate program director regarding the preparation of the M.S. thesis, scheduling a thesis defense and the final submission of the thesis.

**Shipboard Experience.** Each student is required to have at least ten days of shipboard experience. Scheduled field trips may not be counted toward this requirement.

**Request to Graduate.** The student should obtain a copy of the form Application for Graduation from the Registrar’s Office and complete this application. The deadline for submitting this application is listed in the class schedule each semester and usually falls near the end of the semester preceding the one during which graduation is anticipated. It is the student’s responsibility to meet these deadlines and submit the necessary paperwork for graduation.

**Incomplete.** At least one month prior to graduation, all incomplete grades should be cleared. An Academic Record Change form is used for this purpose, and the instructor of the course and the department chair need to sign this form.

**Doctor of Philosophy—Oceanography**

David J. Burdige, Graduate Program Director

**Admission**

The doctoral degree in oceanography is granted to students who have (1) mastered definite fields of knowledge, become familiar with research in these specific fields, and developed perceptions of opportunities for further advances; (2) demonstrated the capacity to do original, independent, scholarly investigation or creative work in their specific fields; and (3) the ability to integrate the field of specialization with the larger domains of knowledge and understanding.

All students in the oceanography Ph.D. program are responsible for reading and understanding the regulations and policies set forth here and throughout this Catalog regarding requirements for the Ph.D. degree. The essential credit requirements for the Ph.D. are as follows. The student shall complete 48 credit hours beyond the master’s degree or 78 credit hours for students admitted to the program with a bachelor’s degree. Up to 24 credits can be granted for dissertation.

**Requirements**

**Major Advisor and Guidance Committee.** A major advisor must be identified to the graduate program director (GPD), at least provisionally, prior to admission to the program. After receiving admission to the program and enrolling, students consult with the GPD and their major advisor about initial course work.

Before completion of nine semester hours (i.e. before the end of the student’s first semester), the student will form a guidance committee in consultation with the major advisor. Please see the graduate program director and the Requirements for Graduate Degrees section of this Catalog for further information on forming a guidance committee.

**Plan of Study—Curriculum Plan.** Sometime in the first year of study, the student shall prepare a plan of study with the aid and approval of the guidance committee. Students should see the graduate program director and refer to the Requirements for Graduate Degrees section of this Catalog for further information on preparing a plan of study.

**Course Work Requirements.** Students who do not have an M.S. degree in oceanography normally complete the 12 hours of core courses (OCEN 604, 610, 620, and 640) within the first year. However, waiving
the requirement to take any of these core courses requires the approval of the graduate program director. Students must achieve a grade of B or better in each of the core courses. Any student receiving a C (2.0) or lower in any graduate course will be dropped from the program. In consultation with the advisor and guidance committee, students will plan a complete program of course work designed to meet their objectives. Depending on the entry status of the student, the following credit hours are also required:

a. Those entering the Ph.D. program with an M.S. degree in oceanography must complete any needed core courses (see above), 24 credit hours of lecture courses and at least 24 credit hours of dissertation research, for a minimum of 48 credit hours.

b. Those entering the Ph.D. program with a B.S. or M.S. degree in a discipline outside of oceanography shall complete 12 credit hours of the core courses listed above, 24-42 credit hours of additional lecture courses and 24-42 credit hours of dissertation research, for a total of 78 credit hours.

For both options, two of these lecture courses (six credit hours) other than the core courses must be in specialty areas of oceanography outside of the student's major area of emphasis. A maximum of 12 graduate credit hours may be transferred into a graduate degree program from non-degree status at Old Dominion University or from another accredited institution, except in the case of an approved interinstitutional program.

Diagnostic Examination. The guidance committee shall administer a written and oral diagnostic examination during the first semester of residence (or before nine credit hours have been completed) for students entering the program with an M.S. degree in oceanography. For students matriculating with a bachelor's degree or an M.S. degree in another field, the guidance committee shall administer the diagnostic examination no later than the third semester of residence (or before completion of 27 credit hours). The diagnostic examination will be prepared by the student's guidance committee in consultation with the graduate program director. The results of this examination are used as guidance for the curriculum plan. The guidance committee may also recommend to the graduate program director, based on the student's performance in the four oceanography core courses, that the diagnostic examination be waived. This must be done in writing, in a memo signed by all members of the student's guidance committee.

Computer Language Skills. To satisfy this requirement the student must solve a substantial problem by writing an original computer program. The student's advisor in consultation with the guidance committee develops the problem and a reasonable timetable for its completion. The problem must be solved independently with no help from others. The results will be evaluated by the advisor and guidance committee who will determine whether the student has solved the posed problem to their satisfaction. This requirement should be completed before taking the candidacy exam.

Ship Time Requirement. Each student is required to have at least ten days of shipboard experience. Scheduled class field trips may not be counted toward this requirement.

Competency In Oral Communication. Competency in oral communication must be established before taking the candidacy examination. It is generally achieved by passing OCEN 691 (1 credit seminar class) sometime in the student’s second or third year of study. Exceptions will only be considered by the graduate program director when requested in writing by the student’s advisor and guidance committee. In general, an exception will be granted only if the student can demonstrate oral competency based on past experience, or if the student has made two oral presentations at national scientific meetings before having taken the candidacy exam.

Proficiency In Writing. Proficiency can be established by the satisfactory evaluation of a student's refereed paper, professional paper, or dissertation by the faculty. Generally, completion of the dissertation satisfies this requirement.

Candidacy Exam. Near the completion of course work and before becoming heavily involved in dissertation work, the student shall pass a candidacy examination designed to test scholarly competence and knowledge of oceanography. The exam has written and oral portions prepared by the guidance committee. Additional details on the structure, form and content of the candidacy exam are available from the graduate program director and in the Requirements for Graduate Degrees section in this Catalog.

Formation of a Dissertation Committee. After the candidacy examination has been passed and the dissertation committee formed, the guidance committee's responsibilities are completed. The dissertation committee is a new committee and is formed to supervise the student's dissertation research. Students should see the graduate program director or refer to the Requirements for Graduate Degrees section in this Catalog for further information on the formation of a dissertation committee.

Changes to the dissertation committee must be made in advance of the oral dissertation defense. Such changes are made only with the approval of the GPD and college dean.

Admission to Candidacy. Admission to candidacy is a formal step that occurs after the student has:

a. passed both parts of the Ph.D. candidacy examination,

b. filed a dissertation prospectus approved by the student's dissertation committee, and
c. completed all formal course work.

The student must be admitted to candidacy at least 12 months before the time the degree is expected to be received, but usually not before the completion of one-and-a-half years of graduate work.

Dissertation Preparation. General regulations and procedures governing the submission of a doctoral dissertation are given in the Guide for Preparation of Theses and Dissertations (obtained at www.odu.edu/ ao/research/thesis.pdf). Students should read this guide carefully before beginning to write their dissertation utilizing the dissertation as chapters that can be submitted for publication is encouraged.

Please note that the thesis and dissertation guide in place at the start of the semester will remain in force for the entire semester, and any changes made to the guide over the academic year (and the dates of these changes) will be listed on the cover page of the guide. Changes to the previous guide will also be noted on the cover page of the guide, or in a separate document that can be downloaded from the same site as the complete guide. For more information on dissertation preparation and approval in the College of Sciences see web.odu.edu/webroot/orge/scri/colsciences.nsf/pages/JoeRule-ThesisDA.

Dissertation Defense. The format of a dissertation defense is determined by the dissertation committee with the approval of the GPD. The defense is chaired by the director of the dissertation committee. The chair will act as moderator, ruling on questions of procedure and protocol that may arise during the defense. Students should see the graduate program director or refer to the Requirements for Graduate Degrees section in this Catalog for further information on the format of the dissertation defense.

Satisfactory performance on this examination (oral dissertation defense) and adherence to all regulations outlined above complete the requirements for the Ph.D. degree. All requirements for the doctoral degree must be completed within eight calendar years from the date of initial registration in the program.

Dissertation Acceptance and Submission. Once the dissertation committee has approved the dissertation, the student and major advisor must go over the entire dissertation to ensure that it adheres to the format described in the Guide for Preparation of Theses and Dissertations before submitting the dissertation to the GPD for review. Three days should be allowed for this review. Once the GPD had approved the dissertation, the student submits the dissertation to the associate dean in the College of Sciences for approval. All approvals must be completed by the day before commencement. However, the associate dean generally requires that all dissertations be submitted prior to this deadline. Students should consult with the GPD for further details.

Request to Graduate. The student should obtain a copy of the form Application for Graduation from the Registrar's Office and complete this application. The deadline for submitting this application is listed in the class schedule each semester and usually falls near the end of the semester preceding the one during which graduation is anticipated. It is the student's responsibility to meet these deadlines and submit the necessary paperwork for graduation.

Removal of Incompletes. At least one month prior to graduation, all incomplete grades should be cleared. An Academic Record Change form is used for this purpose, and the instructor of the course and the department chair need to sign this form.
PHYSICS

Colm T. Whelan, Chair
Charles I. Sukenik, Chief Departmental Advisor

Bachelor of Science—Physics Major

The Department of Physics offers a major in physics with three program tracks leading to the B. S. degree and the B. S. degree with honors.

1. **Track A** (Research) is designed primarily for students preparing to do graduate work in physics and related fields or for students preparing to work professionally upon completion of the B. S. degree in various technical fields requiring the strongest preparation in physics.

2. **Track B** (Professional) is designed for students who wish to create a specialized program of study which combines a strong foundation in physics with strong preparation in another field. Such other fields include engineering, medicine, computer sciences, business, and communications, to name a few.

3. **Track C** (Education) is designed for students who are preparing to be high school physics teachers. This curriculum provides a solid foundation in both contemporary physics and in education pedagogy.

An important feature of all options is the Senior Thesis, which is based on individual research done under the supervision of a faculty advisor. The Senior Thesis is a capstone experience which gives a student the opportunity to apply knowledge and skills acquired in the classroom to real-life research problems in physics. This research can be done either in on-campus laboratories and facilities or at other scientific institutions in the region where departmental faculty members perform research, such as the Thomas Jefferson National Accelerator Facility (including the Applied Research Center) or the Langley Research Center of NASA. On completion of the project, the student must prepare a written final report and make an oral presentation of the results to the department.

**Requirements**

Research and Professional Tracks

**FRESHMAN FIRST SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 211</td>
<td>Calculus I</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>Seminar</td>
</tr>
<tr>
<td>GEN ED</td>
<td>History Perspective I</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Fine Arts Perspective</td>
</tr>
<tr>
<td>ENGL 110C</td>
<td>English Comp I</td>
</tr>
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**FRESHMAN SECOND SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>MATH 212</td>
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</tr>
<tr>
<td>ENGL 111C/111C English Comp II/Technical Writing</td>
<td></td>
</tr>
<tr>
<td>GEN ED</td>
<td>History Perspective II</td>
</tr>
<tr>
<td>PHYS 231N</td>
<td>University Physics I</td>
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**SOPHOMORE FIRST SEMESTER**

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<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>MATH 307 (280)</td>
<td>Differential Equations</td>
</tr>
<tr>
<td>PHYS 232N</td>
<td>University Physics II</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Philosophy Perspective</td>
</tr>
<tr>
<td>CS 150</td>
<td>Introduction to Programming</td>
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**SOPHOMORE SECOND SEMESTER**

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<thead>
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<th>COURSE</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 312 (285)</td>
<td>Calculus III</td>
</tr>
<tr>
<td>PHYS 323</td>
<td>Modern Physics</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Literature Perspective</td>
</tr>
<tr>
<td>CHEM 115N</td>
<td>Foundations of Chemistry I</td>
</tr>
<tr>
<td>Elective I</td>
<td></td>
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**JUNIOR FIRST SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>PHYS 319</td>
<td>Analytical Mechanics</td>
</tr>
<tr>
<td>CHEM 116N</td>
<td>Foundations of Chemistry II</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Social Science Perspective</td>
</tr>
<tr>
<td>MATH 316, 401, 421, or 422</td>
<td></td>
</tr>
<tr>
<td>PHYS 303</td>
<td>Intermediate Experimental Physics</td>
</tr>
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</table>

**JUNIOR SECOND SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 320</td>
<td>Electricity and Magnetism</td>
</tr>
<tr>
<td>PHYS 352</td>
<td>Introduction to Quantum Mechanics</td>
</tr>
<tr>
<td>GEN ED</td>
<td>Social Science Perspective II</td>
</tr>
<tr>
<td>PHYS 413W</td>
<td>Methods of Experimental Physics</td>
</tr>
<tr>
<td>UPPER GEN ED Cluster I</td>
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</table>

Students must select one of the following tracks:

**A. Research Track**

**SENIOR FIRST SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 300-400</td>
<td>Topics Elective I*</td>
</tr>
<tr>
<td>PHYS 404, 414, or Computational Physics (PHYS 420)</td>
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</tr>
<tr>
<td>PHYS 453</td>
<td>Radiation and Optics</td>
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<tr>
<td>PHYS 456</td>
<td>Intermediate Quantum Mechanics</td>
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<tr>
<td>UPPER GEN ED Cluster II</td>
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**SENIOR SECOND SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>PHYS 400</td>
<td>Topics Elective II*</td>
</tr>
<tr>
<td>PHYS 454</td>
<td>Thermal Physics</td>
</tr>
<tr>
<td>PHYS 499W</td>
<td>Thesis (meets oral communication requirement)</td>
</tr>
<tr>
<td>Elective II</td>
<td></td>
</tr>
</tbody>
</table>

**B. Professional Track**

**SENIOR FIRST SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 300-400</td>
<td>Topics Elective I**</td>
</tr>
<tr>
<td>PHYS Core Elective: 404, 414, 420, 453 or 456</td>
<td></td>
</tr>
<tr>
<td>UPPER GEN ED Cluster II</td>
<td></td>
</tr>
<tr>
<td>Elective II</td>
<td></td>
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<tr>
<td>Elective III</td>
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**SENIOR SECOND SEMESTER**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 400</td>
<td>Topics Elective II**</td>
</tr>
<tr>
<td>PHYS 454</td>
<td>Thermal Physics</td>
</tr>
<tr>
<td>PHYS 499W</td>
<td>Thesis (meets oral communication requirement)</td>
</tr>
<tr>
<td>Elective IV</td>
<td></td>
</tr>
</tbody>
</table>

*Research Track requires two topics elective courses from PHYS 313, 350, 411, 415, or 416, with at least one course at the 400-level.

**Professional Track** requires two topics elective courses from PHYS 311, 313, 332, 350, 411, 415, or 416, with at least one course at the 400-level.

**Math Minor:** Students wishing to complete a minor in Applied Mathematics can replace Cluster I, II, and III with just two additional math courses (including MATH 317) and any other university credits necessary to earn the 120 credit minimum for graduation.

**Other minors:** Students who wish to complete a minor in other disciplines can replace Elective I, II, III, and IV with required courses (and prerequisites) in the chosen minor.

Requirements for graduation include a minimum grade of C in PHYS 231N and 232N, a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of the Physics Exit Exam and Senior Assessment. Additional hours may be required to meet the foreign language requirement.

Bachelor of Science—Physics Major with Teacher Education Licensure

Admission. Students wanting to be admitted to the teacher education program must have a 2.75 grade point average in the major and overall, with no grade less than a C- in the content area and the professional education core, and have passed PRAXIS I or achieved State Board of Education-approved SAT scores. Although students may enroll in a limited number of education courses, passing PRAXIS I scores or SAT scores must be on file with the Office of Teacher Education Services and Advising prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the PRAXIS I exam prior to, or during, enrollment in ECI 301.

Continuance. Students must maintain a general grade point average of 2.75 in the academic major and complete all degree requirements for the major and in the professional education core with no grade less than a C- for continuance in the College of Education. In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate PRAXIS II specialty area tests. A list of the passing scores established by the Virginia Department of Education is available on the Virginia Department of Education website or the Office of Teacher Education Services and Advising, Education 152. The PRAXIS II Physics Content Examination must be passed before the candidate...
may begin the teacher internship. Passing PRAXIS II scores must be on file in the Office of Teacher Education Services and Advising and attached to the internship application.

Graduation. Requirements for graduation include passage of the Exit Examination of Writing Proficiency; completion of the Senior Assessment; a minimum 2.75 grade point average overall and in the major, with no grade less than a C- in the major, minor, and professional education core; and completion of a minimum of 120 credit hours. The professional education core satisfies the Upper Division General Education requirement.

The curriculum is as follows:

**FRESHMAN FIRST SEMESTER**
- MATH 211 Calculus I 4
- PHYS 103N Astronomy I 4
- GEN ED Fine Arts Perspective 3
- ENGL 110C English Comp I 3

**FRESHMAN SECOND SEMESTER**
- MATH 212 Calculus II 4
- ENGL 110C/131C English Comp II/Technical Writing 3
- PHYS 231N University Physics I 4
- GEN ED Philosophy Perspective 3

**SOPHOMORE FIRST SEMESTER**
- MATH 307 (280) Differential Equations 3
- PHYS 232N University Physics II 4
- CS 150 Intro to Programming (Satisfies computer requirement) 4
- GEN ED History Perspective I 3
- PHYS 120 Seminar 1

**SOPHOMORE SECOND SEMESTER**
- ECI 301 Social and Cultural Foundations 3
- PHYS 323 Modern Physics 3
- GEN ED History Perspective II 3
- CHEM 115N Foundations of Chemistry I 4
- ECI 360 Management and Discipline 2

**JUNIOR FIRST SEMESTER**
- PHYS 319 Analytical Mechanics 3
- CHEM 116N Foundations of Chemistry II 4
- GEN ED Social Science Perspective I 3
- ECI 304 Applications of Technology in Education 4
- PHYS 303 Intermediate Experimental Physics 3

**JUNIOR SECOND SEMESTER**
- PHYS 320 Electricity and Magnetism 3
- GEN ED Social Science Perspective II 3
- PHYS 413W Methods of Experimental Physics 3
- ESSE 406 The Special Needs Student 3
- GEN ED Literature Perspective 3

**SENIOR FIRST SEMESTER**
- PHYS 300-400 Elective 3
- ECI 408 Reading and Writing 3
- ECI 454 Developing Instructional Strategies: Science 4
- ESSE 413 Human Development 3
- Free Elective 3

**SENIOR SECOND SEMESTER**
- ECI 485 Student Teaching 12
- PHYS 499W Thesis (meets oral communication requirement) 3

Additional hours may be required to meet the foreign language requirement.

Minor in Physics

The minor in physics requires completion of PHYS 231N-232N, 319, 320, and six additional credits of 300-level or 400-level physics (PHYS) courses, with an overall cumulative grade point average of 2.00 or better in these courses. Students must complete a minimum of six hours of these upper-level courses in the minor requirement through courses offered by Old Dominion University. Any substitutions must be approved in writing by the chair or chief departmental advisor of the Department of Physics.

**B. S. Degree with Honors**

Qualified students may receive the B.S. degree with honors (to be noted on their diplomas) by completing specified additional requirements. At the time of application for this designation, a student must have a GPA of 3.50 or higher in physics, a GPA of 3.25 or higher overall, must have completed two contract honors courses, and must have completed 60 credit hours (of which at least 54 must be in grade-point graded courses) at Old Dominion University. (Contract honors courses are specialized courses of individual study under the direct supervision of a professor. Permission to take these courses is granted jointly by the Department of Physics and the Honors College.)

**Advanced Placement**

Advanced placement credit for the lecture portion of PHYS 111N-112N (three credits each, for a total of six credits) may be received for a score of 3, 4 or 5 on the Physics B examination, and advanced placement credit for the lecture portion of PHYS 231N-232N (three credits each, for a total of six credits) may be received for a score of 4 or 5 on the Physics B examination, each administered by the Advanced Placement Program of the College Board. Credit for the laboratory portions of these courses can be earned by completing PHYS 113 or 114, registration for which requires permission of the chair of the Department of Physics.

Advanced placement credit for courses other than PHYS 111N-112N and PHYS 231N-232N may be received on the basis of examinations administered by the Department of Physics. Permission to take such an examination must be obtained from the chair of the Department of Physics. Students may also refer to the Policy on Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

**Clifford L. and Lillian R. Adams Scholarship**

The Department of Physics selects one or more students each year to receive the Clifford L. and Lillian R. Adams Scholarship. The recipient must be a declared physics major and may be an entering freshman, a transfer student, or a continuing student. Selection is based on a student’s academic record, relevant test scores, and recommendations. The award is renewable.

**Master of Science—Physics**

**Requirements**

A student may select either the thesis or non-thesis option. The thesis option requires a student to complete at least 30 graduate course credits that include the thesis courses—PHYS 698 and 699. The non-thesis option requires a student to complete at least 33 graduate course credits and pass a comprehensive written examination. For both options, these credits must include PHYS 556, 603, 604, and 697; no more than 12 credits from courses numbered at the 500 level may be included to meet these requirements. Up to 12 graduate course credits may be included from courses offered by other University departments if they enhance the student’s course of study. Each student’s course of study must have the advance approval of the graduate program director.

A non-thesis student normally takes the comprehensive written examination during his or her third semester of study. Normally, this written examination is the same as the written portion of the Ph.D. Candidacy Examination, graded at the master’s level.

There is no foreign language requirement.

**Doctor of Philosophy—Physics**

**Requirements**

The broad requirements for the Ph.D. degree are (1) satisfactory performance in a minimum number of graduate courses, (2) successful completion of the Ph.D. Candidacy Examination, which has both written and oral parts, and (3) satisfactory completion of a dissertation. There is no foreign language requirement.

**Course Requirements.** The minimum course requirement is 85 graduate course credits beyond the undergraduate degree or 48 graduate course credits beyond the master’s degree. These courses must include PHYS 601, 603, 604, 621, 704/804, 707/807, 708/808, 711/811, 721/821, 731/831, 732/832, and a minimum of six credits of specialized
courses at the 800 level, unless a student is given formal approval to waive or substitute for one or more of these courses. Before formation of his or her dissertation committee, a student is formally advised about these courses and other academic matters by graduate faculty advisors.

**Ph.D. Candidacy Examination.** A student admitted to the Ph.D. program in physics must become a bona fide candidate for the Ph.D. degree by passing the Ph.D. Candidacy Examination. The purpose of this comprehensive examination is to determine if a student has the foundation and maturity to begin research in physics. A student who fails to pass the Ph.D. Candidacy Examination within the allowed number of attempts explained below will be dismissed from the Ph.D. program. However, that student would still have the opportunity to satisfy the requirements for the M.S. degree in physics.

The Ph.D. Candidacy Examination consists of two parts—the Written Examination and the Oral Examination. Each part must be passed independently in order to pass the Ph.D. Candidacy Examination.

**Written Examination:** The written examination is given two times each year—in late August and early January. A student admitted to the Ph.D. program must take this examination at the beginning of his or her third semester of graduate study. In circumstances such that the student has not had the appropriate courses to meet this deadline, he or she may petition the Graduate Program Committee for an extension. If a student fails this examination, he or she is allowed a second attempt, which must be at the time when the Written Examination is next given. In all but the most extraordinary circumstances, a student is dismissed from the Ph.D. program after failing the Written Examination twice.

The Written Examination consists of two days of testing, with eight problems each day. Problems on the first day are from classical mechanics and classical electrodynamics; problems on the second day are from classical electrodynamics and quantum mechanics. All 16 problems must be solved. Graduate faculty members of the Department of Physics grade this examination.

Examination problems are included from both the level of advanced undergraduate physics courses (300, 400, and 500 numbered courses) and the level of the first semester of graduate quantum mechanics (PHYS 621), the first semester of graduate electricity and magnetism (PHYS 604), and graduate classical mechanics (PHYS 603). The difficulty of these questions is typical of the textbooks currently used in the courses cited, and a list of those textbooks is available upon request.

**Oral Examination:** The Oral Examination is a one-hour presentation given by a student to an oral examination committee (normally consisting of his or her dissertation committee, minus the external member), meeting in closed session, on a topic relevant to the student’s dissertation research. This presentation must be made within one year after a student passes the Written Examination. A request for extension of the deadline must be made in writing to the Graduate Program Committee.

A student’s dissertation advisor, in consultation with the student, may choose from two possible formats for this presentation: (1) a presentation by the student based on his or her dissertation research or (2) a presentation on a specific topic that the student has been assigned to investigate for several months. (A student just beginning research might benefit from the second option.) For either option, the student must write a short paper of 10 or fewer pages on his or her presentation topic and give it to all members of the oral examination committee at least two weeks before the scheduled date of the examination. The committee, by majority vote, will determine whether the student passes or fails the Oral Examination. A student who fails the Oral Examination will be allowed a second attempt. The student’s dissertation advisor will decide the format and timing of such a second attempt, with the provision that the second attempt must be completed within six months of the first attempt.

**Dissertation.** The dissertation is the final and most important requirement that must be completed by a candidate for the Ph.D. degree in physics. It must be based on original research in physics that makes a contribution to existing knowledge and be of sufficient quality and interest to merit publication in a refereed physics journal. Research that is classified by the U.S. Government (in a way that restricts its distribution) is not a suitable basis for a dissertation, as one essential characteristic of a dissertation is that its contents must be disseminated from extraordinary circumstances.

The candidate’s dissertation research is supervised generally by his or her dissertation committee. Close supervision is provided by the candidate’s research advisor, who is a member of the dissertation committee and may be a regular or adjunct member of the graduate faculty of the Department of Physics. If the research advisor is a member of the regular faculty, he or she is the chair of the candidate’s dissertation committee. If the research advisor is an adjunct graduate faculty member, a regular graduate faculty member must serve as co-advisor and also serve as chair of the dissertation committee. The dissertation committee is composed of five members, a majority of whom must be members of the regular graduate faculty of the Department of Physics and one of whom must be a graduate faculty member in a department of Old Dominion University other than the Department of Physics. It is the responsibility of the research advisor and the candidate to nominate prospective members for the dissertation committee to the graduate program director, who must formally approve the membership of the dissertation committee.

The format of the dissertation is specified by the Guide for Preparation of Theses and Dissertations, and variations allowed within the Department of Physics are specified by the graduate program director.

**Dissertation Defense.** The final examination that a candidate must pass in order to receive the Ph.D. is an oral examination by the dissertation committee based on the candidate’s public presentation of the results contained in his or her dissertation. This defense is conducted in two phases: (1) a public presentation in front of the dissertation committee that is open to any person who may wish to attend and direct relevant questions to the candidate and (2) a closed session in which the candidate and the dissertation committee in which the candidate is questioned further by that committee. The dissertation committee determines by majority vote whether the candidate passes or fails this final oral defense. If the candidate fails, he or she is allowed only one additional attempt to pass at a later time.

**Applied Physics Endorsement.** A student who meets all other requirements for the Ph.D. in physics may receive an applied physics endorsement by completing PHYS 809 and 812.

**PSYCHOLOGY**

Barbara A. Winstead, Chair
Eva Clarke, Chief Departmental Advisor

**Bachelor of Science—Psychology Major**

A student who intends to major in psychology must attend a Declaration Session in the Department of Psychology. (Students who attend Preview and meet with the Psychology Department advisor may declare psychology as their major at that time.) Students are advised by the chair and departmental advisor until they have accumulated 60 credit hours. Once students accumulate 60 credit hours, they are assigned an individual faculty advisor within their interest area of psychology. Students should visit the Undergraduate Program Office (MGB 246) for information about the major and advising schedules. If the office is closed, students may refer to the bulletin board across from MGB 246 or visit the Psychology Department web page at www.psychology.odu.edu/.

**LOWER DIVISION GENERAL EDUCATION Credits**

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area I (Foundation Courses)</td>
<td>PSYC 310, 313, 314, 324, or 330</td>
<td>3</td>
</tr>
<tr>
<td>Area II (Science)</td>
<td>PSYC 317 Quantitative Methods</td>
<td>4</td>
</tr>
<tr>
<td>Area III (Social Science)</td>
<td>PSYC 201S and 203S</td>
<td>6</td>
</tr>
<tr>
<td>Area IV (Humanities)</td>
<td>PSYC 318W Experimental Methods</td>
<td>3</td>
</tr>
<tr>
<td>Area V (Natural Science)</td>
<td>PSYC 319 Computer Skills</td>
<td>3</td>
</tr>
<tr>
<td>Area VI (Literature)</td>
<td>PSYC 601 History</td>
<td>6</td>
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<tr>
<td>Area VII (Philosophy)</td>
<td>PSYC 602 Philosophy</td>
<td>6</td>
</tr>
<tr>
<td>Area VIII (Natural Science and Technology)</td>
<td>PSYC 603 Natural Science and Technology</td>
<td>12-11</td>
</tr>
<tr>
<td>Area IX (Technology)</td>
<td>PSYC 604 Eight credit hours of Natural Science with labs in sequence</td>
<td>12</td>
</tr>
<tr>
<td>Area X (Technology)</td>
<td>PSYC 605 Additionally, 3-4 credit hours of Natural Science or Technology are required</td>
<td>3-4</td>
</tr>
<tr>
<td>Area XI (Technology)</td>
<td>PSYC 606 Social Science (PSYC 201S and 203S may not be used to satisfy this requirement)</td>
<td>6</td>
</tr>
</tbody>
</table>

**Departmental Requirements for the Major in Psychology (36 hours)**

A grade of C- or better is required in all psychology courses counted towards the major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 201S Intro to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 317 Quantitative Methods</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 318W Experimental Methods</td>
<td>4</td>
</tr>
<tr>
<td>Students must take at least one course from Area I:</td>
<td>3</td>
</tr>
<tr>
<td>Area I (Foundation Courses)</td>
<td>PSYC 310, 313, 314, 324, or 330</td>
</tr>
</tbody>
</table>

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Students must also select at least one course from three of the five other areas: 9
Area II (Developmental) PSYC 321, 334, 351, 352, or 353
Area III (Social/Personality) PSYC 304, 305, 363, or 408
Area IV (Clinical) PSYC 306, 325, 405, 412, or 461
Area V (Cultural Context) PSYC 311, 323, 403, 420, 431, or 460
Area VI (Industrial/Organizational) PSYC 303, 343, 344, or 345
PSYC electives 13
Total (minimum) 36

Interest Area in Clinical Psychology. The undergraduate interest area in clinical psychology was designed for students who wish to develop cognitive and behavioral competencies at the bachelor’s level of mental health specialization. The suggested curriculum, in addition to the requirements for the psychology major, includes:
PSYC 203S, 204, 304, or 321 3
PSYC 369 Practicum in Clinical Psychology 3
PSYC 371 Clinical Supervision in Psychology 1
PSYC 405 Abnormal Psychology 3
PSYC 408 Theories of Personality 3
PSYC 412 Psychological Tests 3

Interest Area in Industrial/Organizational Psychology. The undergraduate interest area in industrial/organizational psychology is designed for psychology majors who have a special interest in industrial, engineering, and organizational psychology. The suggested curriculum, in addition to the general requirements for the psychology major, includes:
PSYC 303 Industrial/Organizational Psychology 3
PSYC 343 Personnell Psychology 3
PSYC 344 Human Factors 3
PSYC 345 Organizational Psychology 3

UPPER DIVISION GENERAL EDUCATION
Option A. Approved Minor, 12-24 hours; also second degree or second major.
Option B. Cluster, 9 hours (3 hours may be in the major area of study.) Seven clusters include at least one psychology course. See the section of this Catalog on Requirements for Undergraduate Degrees for approved clusters.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, passage of the Exit Examination of Writing Proficiency, and completion of Senior Assessment.

B.S./M.B.A. Program
Students interested in pursuing a Master of Business Administration (M.B.A.) advanced degree can earn such a degree in conjunction with a B.S. in psychology. The combined program requires five years. Students should contact the department's Undergraduate Program Office (MGB 246) for more details about this program and entrance requirements.

Minor in Psychology
To complete a minor in psychology, students must pass (1) PSYC 201S, (2) at least one course from Area I, and (3) at least one course from three of the other five areas. Refer to the section above on required psychology courses for a listing of the courses in each area. A student must earn a minimum overall cumulative grade point average of 2.00 in all psychology courses taken towards the minor. A minimum of six hours in the minor must be taken through courses offered by Old Dominion University. Courses in the minor may not be taken on a Pass/Fail basis. A total of 15 semester hours in psychology is required.

Honors Program in Psychology
Qualified undergraduate psychology majors have the opportunity to participate in the Honors Program in Psychology (program chair: Dr. Thomas F. Cash). Students who complete the program and also meet the University’s standards for graduation with honors (see description in this Catalog) may earn the designation of departmental honors on their diplomas. This program is a three-course sequence that involves working on a research project under the supervision of a psychology faculty member.
In the junior year, interested students should discuss their interests with a psychology faculty member who agrees to serve as the research supervisor for PSYC 497 (Supervised Research). In PSYC 497 (see prerequisites under course listing), the student gains research experience and develops a research proposal. In addition to meeting regularly with the faculty supervisor, the student attends and participates in a required seminar for the course.
In the following semester, the student applies for admission to the Honors Program in Psychology and, if requirements are met (see below), enrolls in PSYC 487 (Honors I). In this course, the student finalizes the proposal, presents it to the Psychology Honors Program committee, secures research ethics approval, and begins the thesis research. The student continues to work with the faculty supervisor and participates in the course seminar.
In the third semester, the student enrolls in PSYC 488 (Honors II), participates in the seminar, completes the research and thesis, and presents it to the Psychology Honors Program committee for approval. Eligibility for the Honors Program in Psychology includes:
- Completion of PSYC 317, 318W, and 497
- At least 23 hours earned in psychology
- A 3.50 GPA in the psychology major (with no grades of “Incomplete”) on a 4.00 scale
- A 3.25 cumulative GPA

Psychology Awards
The Alan L. Chaikin Psychology Honors Thesis Award is given each year to a student in the Department of Psychology for the outstanding honors thesis.
The Elizabeth C. Guy Outstanding Psychology Service Award is given each year to the student selected by the faculty who has contributed significant service to the department or field of psychology. Service is primarily defined as participation in departmental, University, community, or professional organizations. However, other qualifications, such as research activity, may be considered. Eligible students must have a minimum overall grade point average of 3.0 and 18 credits in psychology at Old Dominion University.
The Elizabeth C. Guy Outstanding Psychology Academic Award is given each year to the graduating senior with the highest overall grade point average. A minimum of 60 hours (54 graded) at Old Dominion University is required. Further, the student must have completed a minimum of 18 psychology credits at Old Dominion University.
The David Leigh Pancoast Award is given to the student in the Clinical Doctoral Program with the outstanding doctoral dissertation.

Advanced Placement
The Department of Psychology offers course credit for PSYC 201S and PSYC 203S through testing procedures or Advanced Placement credit from the College Board exam. Students may also earn credit for some courses via experiential learning options. Interested students should visit the Undergraduate Program Office (MGB 246) for more information.

Graduate Study
The Department of Psychology offers a program of study leading to the degree of Master of Science with a major in psychology and programs leading to the Doctor of Philosophy with majors in applied experimental psychology, human factors psychology and industrial/organizational psychology. The department also participates in a program leading to the degree of Doctor of Psychology in clinical psychology. This program, under the direction of the Virginia Consortium Program in Clinical Psychology, is a joint venture of the Departments of Psychology at Old Dominion University, the College of William and Mary, and Norfolk State University and the Department of Psychiatry and Behavioral Sciences at Eastern Virginia Medical School.

Master of Science–Psychology
Perry M. Duncan, Graduate Program Director
The master’s program in psychology offers a course of study leading to the Master of Science with a major in general psychology. The master’s degree program is appropriate for students wishing to enter a doctoral
program at Old Dominion or another university or for those seeking the master's as a terminal degree. The curriculum is designed to provide a strong background in research methods and general psychology so that the student will have a wide range of choices for future professional development.

Graduate students are encouraged to work closely with members of the faculty and to participate in the research and other professional activities that are available within the department. Faculty are involved in research in the general areas of clinical, social, developmental, neuropsychological, human factors, organizational, personnel, and community psychology. Currently, faculty and students are engaged in research projects on various topics, including: body image, psychological testing, coping with stress and depression, personal relationships, metacognition, parenting, adaptive automation, community interventions to improve driving and pedestrian behavior, modeling and simulation, reactions to alarms, vigilance, human use of in-vehicle navigation systems, telework, women and minorities in information technology occupations, coping with chronic disease, behavioral psychopharmacology, and personnel selection.

Admission

To qualify for admission, a candidate must meet the general University admission requirements. In addition, the candidate must present: (1) undergraduate courses in statistics and experimental psychology and nine additional hours in psychology; (2) official scores on both the aptitude section and the advanced section in psychology of the Graduate Record Examination (GRE); and (3) transcripts of all undergraduate and graduate work. A brief statement by the student outlining personal goals and academic objectives and three letters of reference (at least two of which are from former college or university teachers) are requested. All credentials in support of applications should be sent to the Office of Admissions.

Requirements

To qualify for the Master of Science with a major in psychology, a student must meet the following requirements.

Program of Study. The student must maintain a B average (3.00 on a 4.00 scale) in a minimum of 36 hours of course work. The student is required to successfully complete a core of courses established by the faculty with at least a B (3.00) average in these courses. The core courses consist of the following: PSYC 713, 714, 727, 728, 731 or 741, and 651 or 749. Completion of the core is a prerequisite for beginning work on the thesis (including registration for PSYC 698 and 699), or non-thesis comprehensive exam. Full-time students must complete the core courses in the first year, and part-time students must do so in the first two years.

Writing proficiency is essential for successful performance in this program. When it appears that remediation is required in writing skills, the student will be referred to the Writing Center for diagnosis and writing improvement activities.

Student performance will be monitored by the graduate program director. Students will be advised when their performance does not meet minimum requirements.

Following completion of the core course requirements, students will elect either the thesis or non-thesis option for completing the degree.

Thesis Option. Students choosing the thesis option complete 30 hours of course work plus six hours of research and thesis. The thesis option is required for students wishing to pursue doctoral training. Prior to beginning research, the student will submit to the graduate program director a written thesis proposal.

When the student has completed the research, a written thesis must be submitted to the thesis committee. Completion of the thesis depends on the acceptance of the written thesis by the thesis committee and the graduate program director, as well as on passing an oral examination in a public defense of the thesis.

Non-thesis Option. The educational and professional goals of some students are better served by completing the work for the master’s degree without the thesis component. Students who elect the non-thesis option complete 36 hours of course work, including at least three hours of practicum.

Non-thesis students are required to pass a comprehensive exam in an area of expertise identified by the student in conjunction with his/her comprehensive exam committee. Prior to preparation for the exam, the student will submit to the graduate program director a proposed reading list.

Certificates of Concentration

Certificates of concentration may be earned by students receiving a master’s degree in psychology. To obtain a certificate in one of three possible areas, the student must complete 12 credit hours of courses relevant to the area of concentration and maintain a minimum GPA of 3.00 in those courses. Course credit hours to fulfill the core requirements for the master’s degree may not be used toward a certificate of concentration. The student must also complete a research project or practicum relevant to the area of concentration. A research project must be documented to the master’s program committee in the form of either a written paper or a conference presentation. The following is a list of the three areas and the relevant courses for each area.

I. Psychopathology and Assessment
   Required: PSYC 661, 663, and 664
   Other relevant courses: PSYC 653, 672
   Other relevant courses: PSYC 726, 745, 763

II. Quantitative and Assessment
   Required: PSYC 723, 663 and/or 664
   Other relevant courses: PSYC 726, 741 (only three credit hours count toward certificate)

III. Applied Cognitive Psychology
   Required: PSYC 731 and 741 (only three credit hours count toward certificate)

Other relevant courses: PSYC 651, 663, 672, 749, 770

Courses not listed, but relevant to a certificate, may be used to fulfill the requirements for the certificate as approved by the master’s program committee. The student should make such requests in writing to the master’s program chair.

Doctor of Philosophy—Applied Experimental Psychology

Bryan E. Porter, Director

Admission

The graduate program in applied experimental (AE) psychology admits students at two levels: with a master’s or bachelor’s degree in psychology or a related field. Each applicant must submit: (1) official scores on the Graduate Record Examination (GRE), including aptitude and advanced sections; (2) a brief statement outlining personal goals and academic objectives; (3) three letters of reference, at least two of which are from former college/university teachers or research supervisors; and (4) transcripts of all prior academic work.

Overview of Topical Areas

The AE program is designed to provide (a) broad doctoral training firmly based on psychological theory and basic behavioral science, (b) greater depth of knowledge broadly spread over the fundamental areas of experimental psychology, and (c) concentration in an area of experimental psychology for applied settings. The general philosophy and plan of the AE psychology program at Old Dominion University is to provide graduate training consisting of four phases: (1) a core of basic psychology, acquired primarily at the master’s level, (2) in-depth training in statistics, methodology, and grant and manuscript writing, (3) research experience in a field of AE psychology, and (4) completion of a dissertation representing a significant contribution to AE psychology. For example, two research fields with which numerous faculty members are involved are health psychology and developmental psychology.

Requirements

The Ph.D. degree in AE requires 84 semester hours of credit beyond the bachelor’s degree or at least 48 semester hours of post master’s training. Students entering the program with a bachelor's degree must complete the first phase of the program by meeting the requirements for the bachelor's degree in general psychology. For the student with a bachelor’s degree, completion of the program requires approximately five years of study. For the student who holds the master’s degree upon entering the Ph.D. program, completion requires approximately four years. A student entering the program with a bachelor's degree must meet the requirements for the master’s degree in general psychology (i.e., 36 semester hours with appropriate course work). The student is required to complete a core of master’s-level courses with at least a B average.

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The core courses consist of the following: PSYC 827, 828; either PSYC 831 or 841; and either PSYC 651 or 849. Attaining the master's degree requires two years of study.

Student completing the Ph.D. in AE are also required to take:

a) PSYC 734/834 (Proseminar in Applied Experimental Psychology)
b) PSYC 823 and 836 (Quantitative III and IV)

Near the completion of the master's degree requirements, the student forms a guidance committee of graduate faculty members who assist in developing a plan of study tailored to the student's needs and interests. The plan of study outlines the minimum of 48 hours of postmaster's training, including (a) completion of the remaining required course (PSYC 833, Grant and Manuscript Writing), (b) maintenance of a strong focus in research methods and statistics, (c) completion of supplementary courses to support the chosen specialty (e.g., health-related courses to be taken by health specialists), and (d) development of a viable research program.

**Candidacy Examination.** Prior to admission to candidacy (i.e., the beginning of formal work on the dissertation), each student is required to pass a written and oral qualifying examination. The written examination consists of two parts: (a) core experimental psychology (statistics, methodology, experimental principles, ethics; four hours) and (b) specialty area (research program and relevant content knowledge; eight hours). An oral examination follows the written, during which the student defends answers to the written components (two hours).

**Research Emphasis.** A major objective of the AE psychology program is to provide the student with substantial experience in planning, conducting, and reporting results of independent research. Toward this end, a student is expected to engage in a variety of research activities. This expectation is reflected in the program's few traditional classroom course requirements beyond the master's degree. The time should be spent on mostly research-related activities (e.g., Reading, Individual Study [Research], and Dissertation). The student is expected to acquire research experiences that go well beyond formal course requirements. These research experiences may take a variety of forms and occur in a variety of settings. For example, the student is encouraged to engage in both laboratory and field research related to the AE specialty, to serve as a member of a larger research team when appropriate or available (perhaps serving as a graduate research assistant on an externally sponsored grant), and to engage in independent non-sponsoring research. The student is also encouraged to seek out opportunities to conduct research projects (including grants and contracts funded through the Old Dominion University Research Foundation) on his or her own and in collaboration with faculty members. The accumulation of these research experiences is expected to be evinced by student participation in the presentation of papers at professional meetings, the publication of manuscripts in refereed journals, the publication of technical reports, and the submission of grant/contract proposals.

**Graduate Student Teaching.** Teaching a course is an experience that is worthwhile regardless of the eventual career role(s) that a student envisions, and the experience should be taken seriously for its professional value. Benefits associated with teaching a course include expanding and solidifying knowledge about general and AE psychology, polishing communication skills, and establishing professional identification. Although there are other ways to acquire these benefits (e.g., presentations at conferences, consulting experiences, organizing and conducting workshops), teaching a course systematically builds these experiences into a student's Plan of Study. Moreover, any student who plans an academic career should teach one or more courses in preparation for that career. The student should also recognize that during the course of graduate training, financial support is often provided by the Psychology Department from graduate teaching assistant or adjunct teaching funds. This type of financial support almost always requires that the student be partially or fully responsible for teaching a course. The student should be prepared for an eventual obligation to teach a psychology course by enrolling in Teaching of Psychology (PSYC 815).

**Dissertation.** The doctoral dissertation must represent an achievement in research and a significant contribution to knowledge in the major area of study.

**Dissertation Defense.** An oral examination in defense of the dissertation is required. The aim of the defense is to explore with the candidate the methodological and substantive contributions of the completed dissertation.
the criteria for meeting the professional-practice experience requirement and judges the adequacy of the experiences.

**Dissertation.** The doctoral dissertation must represent an achievement in research and a significant contribution to knowledge in the major area of study. It is equivalent to no more than 24 semester hours of course work.

**Dissertation Defense.** An oral examination in defense of the dissertation is required. The aim of the defense is to explore with the candidate the methodological and substantive contributions of the completed dissertation.

**Research Opportunities.** Lab facilities are available for research in cognition, human perception and performance, modeling and simulation, and psychophysiology. Facilities include personal computers, local area networked testing stations, sound-attenuated testing chambers, driving simulators, flight simulators, human-computer interaction laboratory, and EEG and ERP recording equipment. Access to University computing and multimedia development facilities is also available. To complement the program's emphasis on modeling and simulation, students also have access to the Virginia Modeling, Analysis and Simulation Center (VMASC). VMASC is an ODU-affiliated research and development center where scientists from a number of disciplines create and test computer models and simulation applications to benefit industrial, academic, and governmental interests.

Research is supported by private sector, local, state or federal governmental organizations (e.g., National Science Foundation, National Institutes of Health, NASA, etc.), or one of the military services. Doctoral students are encouraged to become engaged in one of these research programs early in the process of their education.

**Doctor of Philosophy-Industrial/Organizational Psychology**

Robert McIntyre, Graduate Program Director

**Admission**

The Doctor of Philosophy (Ph.D.) program in industrial and organizational (I-O) psychology admits students with bachelor's or master's degrees from psychology or related fields. Each applicant must submit: (1) official transcript on the Graduate Record Examination including the verbal, quantitative, analytical writing, and psychology tests; (2) a brief statement outlining the prospective student's personal goals and academic objectives; (3) a sample of recent academic writing (e.g., a paper required in an undergraduate course); (4) three letters of reference, at least two of which are from former college or university teachers; and (5) transcripts for all prior academic work.

**Overview of the Topical Areas**

The program covers current theoretical and practical issues and topics within I-O psychology. The following is a partial list of these areas: job analysis, psychological testing, selection systems, human resource development, human resource management, study of work organizations and organizational influences on individuals, work motivation, work-family interface, job satisfaction, organizational commitment, leadership, group and team processes, organization development and change and perceived fairness in the workplace, new forms of work organization such as telework and virtual teams, and international aspects of I-O psychology.

**Requirements**

The program requires 84 semester hours of credit beyond the bachelor's degree or approximately 48 hours of postmaster's education, which includes up to 24 dissertation research credits. For the individual entering with a bachelor's degree, the general plan of graduate education consists of four phases: (1) course work in general psychology, acquired while working toward the master's degree; (2) broad education in the general area of I-O psychology; (3) research and professional-practice experience in I-O psychology; and (4) completion of a dissertation representing a significant professional contribution to I-O psychology.

For the individual entering with a master's degree, a minimum of 48 hours of doctoral-level credits will be required, based on a review of the student's educational background by the faculty and the graduate program director's review. The entering student holding a master's degree must pursue a plan of study identical in spirit to the latter three phases of the program. For the student with a bachelor's degree, completion of the program requires approximately five years of study. For the student who holds the master's degree upon entering the Ph.D. program, completion requires approximately four years. A student entering the program with a bachelor's degree must meet the requirements for the master's degree in general psychology (i.e., 36 semester hours with appropriate course work). The student is required to complete a core of master's-level courses with at least a B average. The core courses consist of the following: PSYC 827, 828; either PSYC 831 or 841; and either PSYC 651 or 849. Attaining the master's degree requires two years of study.

During the second semester of the student's second year, the student must form a guidance committee of graduate faculty members who assist in developing a plan of study tailored to the student's needs and interests. The plan of study outlines the student's minimum of 48 hours of postmaster's education.

**Candidacy Examination.** Prior to admission to candidacy (i.e., the beginning of formal work on the doctoral dissertation), each student is required to pass a qualifying examination covering the student's areas of specialization. The candidate is examined broadly in the areas, not merely in a single aspect of concentration. The examination consists of a written part (twelve hours) and an oral part (two hours).

**Practical Experience.** The student must obtain professional practice experiences during the course of graduate education. An internship is one excellent option for meeting this requirement. However, the student can also meet the requirement by active involvement in applied research or consulting activities under the direct supervision of one or more Ph.D. psychologists. The student's guidance committee establishes the criteria for meeting the professional-practice experience requirement and judges the adequacy of the experiences.

**Dissertation.** The doctoral dissertation is a significant and creative research achievement and a significant contribution to knowledge in I-O psychology. An oral examination in defense of the dissertation is required. The aim of the defense is to evaluate the doctoral candidate's mastery of the methodological and substantive contributions of the completed dissertation.

**Research Opportunities.** Laboratory and field research programs are conducted by the I-O faculty on such diverse topics as selection systems, training systems, development and implementation of performance appraisal systems, team performance and assessment, work-family interface, workplace diversity and inclusion, organizational change, innovation management, telework, virtual teams, and international I-O issues. Research is supported by a variety of agencies such as the National Science Foundation; National Institutes of Health; the NASA/Lan- gley Research Center; the Virginia Modeling, Analysis and Simulation Center; and the military services. Students are encouraged to become engaged in one of these research programs early in the process of their education.

**Doctor of Psychology—Clinical Psychology**

Robin J. Lewis, Graduate Program Director

The Department of Psychology participates in a program that awards the degree of Doctor of Psychology (Psy.D.) in clinical psychology. This program, offered through the Virginia Consortium Program in Clinical Psychology, is a joint venture of the Departments of Psychology at Old Dominion University, Eastern Virginia Medical School, and Norfolk State University and the Department of Psychiatry and Behavioral Sciences at Eastern Virginia Medical School. The combined efforts of these institutions give considerable breadth and depth to this unique program. The emphasis of the program is on the training of highly skilled clinicians who will work in those areas of society where mental health care needs are not being met by the present system. The program is fully accredited by the American Psychological Association.

**Admission**

Information about the program and a downloadable application are available at the program's website: www.vcppp.odu.edu/vcppp. To be admitted to the Doctor of Psychology program, the student must have a baccalaureate degree and an acceptable background in psychology. In addition, the applicant must present: (1) official scores on the Graduate Record Examination (both the aptitude and advanced sections are required); (2) a brief statement outlining personal goals and academic objectives; and (3) three letters of reference. A personal interview may also be required.
Requirements

The Doctor of Psychology program provides students with a high level of professional training. The program consists of a minimum of four years of post-baccalaureate training. The curriculum involves a specific sequence of required courses to ensure mastery of the knowledge and skills necessary for professional competence. The first two years (six semesters) provide for an intense program of basic behavioral science and clinical courses and practica. In the third year, course work includes technology in mental health care administration, practica, and concentration courses. The other main activity of the third year is the doctoral dissertation. The one-year full-time clinical internship is completed during the fourth year. The internship is not provided by the Virginia Consortium.

Student Evaluation. Students are regularly evaluated in both course work and practicum activities. A formal evaluation of students’ progress is conducted at the end of the first year. At the end of the second year, each student is evaluated through a written and oral comprehensive examination that covers both course and clinical competence.
Urban Services Doctoral Program

Berhanu Mengistu, Graduate Program Director, College of Business and Public Administration
William H. Graves III, Graduate Program Director, College of Education
Clare Houseman, Graduate Program Director, College of Health Sciences

The Ph.D. in urban services program is planned for discontinuation and will be replaced by a Ph.D. in public management and urban policy in the College of Business and Public Administration, a Ph.D. in education in the College of Education, and a Ph.D. in health services research in the College of Health Sciences. Please contact the appropriate college for additional information.
### Courses of Instruction

Courses in which the leading number is zero, e.g. 050, are nondegree credit courses primarily in developmental studies. Courses numbered 100 are primarily for freshmen, 200 for sophomores, 300 for juniors, 400 for seniors, 500-, 600-, 700-, and 800-level courses are exclusively for graduate credit. Courses at the 500 level are available for graduate credit only and correspond to undergraduate 400-level courses. However, a different grading scale is used for 500-level registrants and additional and higher quality work is required.

General education courses are designated by the fourth digit in the course number. At the lower division, the following designations are used: for Skills courses, C=Composition, D=Computing, F=Foreign Language, M=Mathematics, and R=Oral Communication; for Perspectives courses, A=Fine and Performing Arts, H=History, K=Natural Science (beyond the eight-credit "N" sequence) L=Literature, P=Philosophy, N=Natural Science, S=Social Science, and T=Technology; Writing intensive courses are designated by a W in the fourth digit.

Many of the courses listed indicate the semester the course will be offered. Every attempt will be made to offer the courses in the semester(s) indicated. However, this may not always be possible.

The University reserves the right to withdraw any course for which there is insufficient registration.

#### Course Prefixes

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<th>Prefix</th>
<th>Description</th>
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<td>Accounting-ACCT</td>
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<td>Aerospace Engineering-AE</td>
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<td>African-American Studies-AAST</td>
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<td>American Studies-AMST</td>
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<td>Anthropology-ANTR</td>
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<td>Arabic-ARAB</td>
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<td>Early Childhood, Speech Language Pathology and Special Education-ESSE</td>
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<td>Economics-ECON</td>
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<td>Educational Curriculum &amp; Instruction-ECI</td>
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<td>Educational Leadership &amp; Services-ELS</td>
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**COURSES OF INSTRUCTION** 247
Accounting and Taxation

Professors D. E. Ziegennius (Chair of the Department of Accounting and Taxation), A. M. Agami, and O. B. Martinson (Graduate Program Director, M.S. in Accounting). Associate Professors S. C. Gara, L. J. Henry and T. C. McKee (Graduate Program Director, M.S. in Accounting), R. E. Pinkser and Y. Xu. Senior Lecturers W. W. Berry, Senior Lecturer P.M. Doherty, Lecturers T. R. Kubichan and R. R. Spurrier. Instructors M. L. Brewer and J. M. Morris.

Accounting—ACCT

201-202. Principles of Accounting. 201 or 226 is prerequisite to 202. Lecture 3 hours; 3 credits each semester. Elementary accounting concepts and procedures used in traditional managerial accounting, proprietorships, partnerships, and corporations; statement analysis; operational accounting; and use of accounting data for special decision making.

226-227. Honors: Principles of Accounting. Open only to students in the Honors College. Special honors sections of ACCT 201-202. Elementary accounting concepts and procedures used in the preparation of financial statements for sole proprietorships, partnerships, and corporations; financial statement analysis; operational accounting; and use of accounting data for special-purpose decision making.

311. Managerial Accounting. Lecture 3 hours; 3 credits. Prerequisites: ACCT 201-202 or 226-227, DSCI 206. This course focuses on the allocation of costs within traditional managerial accounting systems. Common and joint cost allocations are performed under job order, process, and standard costing systems. Income models are developed for exploring cost-volume-profit relationships.

317. Accounting Information Systems. Lecture, individual and group project, and 3 hours of discussion; 3 hours; 3 credits. Pre- or corequisite: ACCT 301. Prerequisite: computer literacy course. The theoretical and practical aspects of systems analysis, design, and implementation of manual and/or computerized accounting systems. Emphasis is placed on the investigation and documentation of internal controls, accounting cycle attributes, and auditing techniques for computer-based systems. Individual projects include comprehensive documentation of an accounting application and two case studies using a current financial accounting software package. The project group involves the development of an accounting system for a specific application and its presentation to the class. The course qualifies as a CAP practicum experience. (qualifies as a CAP experience)

369. Practicum. 1-3 credits. May be repeated for credit. Prerequisites: ACCT 301; junior standing and permission of the chief departmental advisor; approval of Career Development and Placement for pass/fail grading only. (qualifies as a CAP experience)

368. Student Internship. 1-3 credits. Prerequisites: ACCT 301; junior standing and permission of the chief departmental advisor; transfer students must have completed one semester of the internship prior to enrollment. Approval for enrollment and allowable credits are determined by the department and Career Management Center in consultation with the student. Participation in a professional work experience. (qualifies as a CAP experience)

405/503. Accounting and Auditing in the Public/Nonprofit Sector. Lecture 3 hours; 3 credits. Prerequisites: ACCT 201 or 226, ACCT 202 or 227 or ACCT 601, senior standing of the chief departmental advisor. Approval for enrollment and allowable credits are determined by the department CAP advisor and the Career Management Center in consultation with the student. Participation in a professional work experience. (qualifies as a CAP experience)

411-511. Financial Auditing. Lecture, case study, and discussion 3 hours; 3 credits, each. Corequisites: ACCT 301, 302, and 420. Prerequisites: ACCT 302, senior standing or permission of the chief departmental advisor. Standards and ethics of the public accounting profession are examined. Financial, operational and compliance auditing is covered. Analytical, communication, and interpersonal skills are strengthened.

421-521. Taxation. Lecture 3 hours; 3 credits. Prerequisites: ACCT 201 or 226, ACCT 202 or 227 or ACCT 601, and junior standing or permission of the chief departmental advisor. This course is a tax law and its application to personal and business tax situations. Reconciliation of tax and accounting concepts.

622. Cooperative Education. 1-3 credits. Prerequisite: permission of the department chair in accordance with departmental Cooperative Education policies and approval of Career Management. Student participation in a full-time professional work experience.

688. Accounting Internship. 1-3 credits. Prerequisite: permission of the chief of the accounting program. Opportunity to carry out tax practice in the profession of accounting where theories, concepts, and financial management techniques are applied in a business environment.

693. Selected Topics in Accounting. 3 credits. Prerequisites: permission of the chair of the Department of Accounting and the graduate program director, and an established average grade point average. This course is designed for students who have had one of the required courses working for an external assignment in an area of particular interest in accounting.

727. Strategic Costing and Consulting. Lecture and discussion 3 hours; 3 credits. Prerequisite: ACCT 625 or equivalent. As a CAP experience.

Taxes—TAX

650. Tax Research. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Provides in-depth study of tax research methodology. Includes tax questions, locating and assessing potential authority, and communicating research results. Introduction to computer- and web-based research techniques.

651. Taxation of Corporations I. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Covers federal income taxation of corporations and shareholders. Includes organizing a corporation; establishing capital structure; determining tax liability; dividends and other non-interest payments; stock redemptions; and liquidations.

652. Taxation of Partnerships and Partners. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Taxation of partners and partnerships: formation, termination, distributions and liquidations, and sales of partnership interests. Limited partnerships in conjunction with their use as tax shelters, and the multifaceted attributes of family business issues.

653. Taxation of Estates and Gifts. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Examines transfers under federal estate and gift tax laws. Includes organizing a trust; determining the tax-free and taxable nature of these transactions and coordinating the issuance of gifts and estates; transfers taking effect at death; transfers with retained powers; concurrent property interest; powers of appointment; valuation problems; expenses, debts, and taxes; charitable bequests; marital deduction; taxable inter vivos gifts; gift splitting and credits; consideration of Chapter 14 and asset freezing techniques; and transfer taxation of life insurance.

654. Income Taxation of Estates, Trusts & Beneficiaries. Lecture 3 hours; 3 credits. Prerequisite: TAX 653. Examines simple, complex, and revocable trusts; trust accumulation distributions; income in respect of decedents, generation skipping trusts, charitable remainder interests, terminations; excess deductions; basis rules; and the determination of income tax liabilities of estates and trusts.

655. Taxation of Corporations II. Lecture 3 hours; 3 credits. Prerequisite: TAX 651. Analyzes the different types of business entities. Emphasizes the tax treatment of corporations. Includes determining tax consequences for corporations and shareholders involved in an acquisition or reorganization and analyzing necessary requirements for a tax-free corporate division (spin-off). Covers aspects of filing consolidated federal income tax returns.

656. Taxation of Deferred Compensation. Lecture 3 hours; 3 credits. Prerequisite: TAX 651. Discusses federal income taxation of deferred compensation plans with emphasis on federal tax requirements. Reviews plan qualification requirements, reporting and disclosure requirements, and distribution rules. Includes discussion of specific types of deferred compensation plans such as ESOPs.

657. State and Local Taxation. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Examines state levying of individual income, corporate income, property, and sales and use taxes. Covers particular state tax issues.

658. Tax Aspects of International Business. Lecture 3 hours; 3 credits. Prerequisite: ACCT 421/521 or equivalent. Taxation of foreign persons conducting business in the United States. Covers determinations of realized and recognized gains and losses and their tax treatment on property dispositions. Includes cross-border issues such as depreciation, depletion, basis and capital gains problems.

661. Taxation of the Small Business Corporation.
Aerospace Engineering--AE

Professors E.J. Cross (Director of ODU - Langley Full Scale Wind Tunnel and Chair of the Department of Aerospace Engineering), T.E. Abers, R.L. Ash (Associate Vice President for Research and Development), and O. Bayen and D. Parikh (College of Engineering and Technology); C.P. Brichter, A.O. Kandil and C. Mei. Associate Professors D. Landman and B. Newman (Graduate Program Coordinators), A. Elgabry and D. D. Young. Assistant Professors D. B. Johnson, F. A. K. Syed and S. Taryaghi.

403/503. Flight Mechanics. Lecture 3 hours; 3 credits. Prerequisites: AE 406, ME 436. Aircraft concepts including performance prediction and optimization, flight and maneuver envelopes, and steady flight performance. Additional topics: longitudinal static stability and trim; aircraft dynamics; development, separation and solution of aircraft equations of motion; natural modes; dynamic stability; sensors and actuators; and design of stability augmentation and automatic flight controls.

406/506. Flight Vehicle Aerodynamics. Lecture 3 hours; 3 credits. Prerequisites: ME 303, 312, 340. Inviscid flow concepts including Euler equations, stream function, velocity potential, singularities, vorticity and circulation, and turbulent flow. In addition, external flows, lift and drag, thin airfoil theory, finite wing theory and airfoil design will be discussed.

407/507. Ground Vehicle Aerodynamics. Lecture 3 hours; 3 credits. Prerequisite: ME 303 or MET 330 or CEE 330. Introduction to ground vehicle aerodynamics; fluid dynamics and aerodynamic phenomena. Basic concepts of performance design, truck and bus aerodynamics, high speed trains, boat, overall and discussion of methods and problems in the field.

417/517. Propulsion Systems. Lecture 3 hours; 3 credits. Prerequisite: ME 312 or 414. Basic principles of design, operation, and control of propulsion systems - including turbojet, turboprop, and ramjet engines. Introduction to chemical rockets, ion and plasma thrusters.

420/520. Aerospace Structures. Lecture 3 hours; 3 credits. Prerequisite: ME 332. Analysis of aircraft and space vehicle structural components. Effects of bending, torsion and shear on typical aerospace structural components. Introduction to space truss and beam theory. Introduction to typical aerospace structures. Introduction to composite structures.


440/540. Introduction to Space Systems Engineering. Lecture 3 hours; 3 credits. Prerequisites: MATH 307 and PHYS 232N. Design and analysis of aerospace systems. Spacecraft design and spacecraft system configuration design and development through propulsion, altitude control, spacecraft structural design, thermal control, power and communication systems, and mission design.

457/557. Motorsports Vehicle Dynamics. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisites: ME 205 and MATH 251. Basic mechanical foundations of vehicle dynamic performance. Analytical methods in vehicle dynamics. Laboratory consists of various vehicle dynamics tests on model vehicles and full-size racers. (cross-listed with MATH 407/507)

467/567. Racetrack Performance. Lecture 1 hour; laboratory 6 hours; 3 credits. Prerequisites: AE 457/557 or course permission. Includes driving, aerodynamic, and track characteristics of a specific racetrack. Analysis of track surface conditions. Design of suspension and suspension systems. Operation and installation of sensors and data acquisition systems. Use of computer simulation in specification of car set-up.


477/577. High Performance Piston Engines. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: MET 350 or ME 352. Prerequisite: MET 300 or ME 311. A study of fundamental principles and performance characteristics of the spark ignition internal combustion engine. The study includes introduction to chemical reactions, engine types and their operation, engine design and operating parameters, ideal models of engine cycles, combustion in spark ignition engines, and heat transfer. (cross-listed with MET 480)

485/585. Topics in Aerospace Engineering and Engineering Mechanics. 1-3 credits. Prerequisite: permission of the instructor. Special topics of interest with emphasis placed on applications in aerospace engineering and engineering mechanics.

497/597. Independent Study in Aerospace Engineering. Lecture 2 hours; 3 credits. Prerequisites: AE 406, AE 436, or ME 352 or equivalent. Exemption from the unique rules applicable to federal taxation of farmers and ranchers. Also, covers the basics on the new Limited Liability Companies and Virginia law on LLCs. Topics may vary each year.

697. Independent Study. 3 credits. Prerequisites: AE 421/521 or equivalent and approval of instructor. Individually supervised research projects in selected tax areas. Approval of supervising professor as to topic and evaluation required at time of registration.

634. Spaceship Natural and Artificial Habitat. Lecture 3 hours; 3 credits. Prerequisites: MATH 691 and ME 404. Natural modes of discrete and continuous systems; closed form and approximate solutions; numerical methods. Theory and application of modal analysis and approximate methods for undamped and damped systems; transform and wave solutions. Finite element methods. Structural optimization. Introduction to nonlinear vibrations. Applications to beams, plates and shells.

636. Applied Analog and Digital Control. Lecture 3 hours; 3 credits. Prerequisite: ME 436, ECE 461 or equivalent. Computer-aided analysis and design of practical control systems. Introduction to state-space, digital signal processing and digital control. Laboratory sessions on aliasing, analog control, system identification, and real-time control.

640. Finite Element Analysis I. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Mathematical concepts of finite element analysis. Variational approach based on weak-form solutions to partial differential equations. Basic concepts of interpolation functions, continuity, discretization of domains, and applications to 1-D and 2-D problems of engineering. (cross-listed with CEE 716/816 and ME 635)

641. Experimental Structural Dynamics and Modal Analysis. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: AE 634. Experimental techniques and methods for structural testing and modal analysis. Signal processing, computer utilization including electromagnetic shakers, impact hammers, accelerometers, laser vibrometers, signal analysis computer software, test design and architecture. Frequency response and data acquisition, assessment, and post-processing. Development of mathematical models from experimental data.


667. Cooperative Education in Aerospace Engineering. Lecture 3 hours; laboratory 3 credits. Prerequisite: permission of the instructor. Work or other professional career-related experience of a limited duration. Highly applicable to aerospace engineering or engineering mechanics.
668. Internship in Aerospace Engineering and Engineering Mechanics. 1-3 credits. Prerequisite: permission of the instructor. Career-related experience of a limited duration and highly applicable to aerospace engineering or engineering mechanics.

699. Practicum in Aerospace Engineering and Engineering Mechanics. 1-3 credits. Prerequisite: permission of instructor. Career-related experience of a limited duration and highly applicable to aerospace engineering or engineering mechanics.

672. Design of Experiments. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: AE 472/572. Formal experiment design. Review of relevant statistics, ANOVA, multiple comparisons, residuals and model adequacy checking. Randomized complete block designs, factorial designs, 2^k factorial designs. Randomize factors in a time-random and mixed factors in experiment. Optimization, introduction to response surface methods. Laboratory exercises use experiments applied to spacecraft testing, including wind tunnel testing and instrument calibration.

684. Virtual and Synthetic Environments and Applications. Lecture 3 hours; 3 credits. A systematic introduction to the foundation of Virtual Environments, including sensory perception, displays, interaction techniques, software and design principles; overview of Virtual Environments application areas; a course project on engineering applications.


691. Experimental Research Project. Laboratory 6 hours; 3 credits. Prerequisite: permission of the instructor. An independent research project in the area of aerospace engineering or engineering mechanics, structural dynamics or applied automatic control. Results will be reported in a format and quality similar to a technical conference paper.

695. Topics in Aerospace Engineering and Engineering Mechanics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. An independent research project in the area of aerospace engineering or engineering mechanics with emphasis placed on recent developments in aerospace engineering or engineering mechanics.

697. Independent Study in Aerospace Engineering and Engineering Mechanics. 1-6 credits. Prerequisite: permission of the instructor. Individual analytical, computational, and experimental study of aerospace or engineering mechanics leading to the Master of Science degree.


710/810. Transonic Aerodynamics. Lecture 3 hours; 3 credits. Prerequisite: AE 611. Singular surfaces under the assumptions of transonic, incompressible, inviscid flow and the invariance with respect to scales and variables of the Navier-Stokes equations or Euler’s equations. Transonic shock wave phenomena.

711/811. Hypersonic Aerodynamics. Lecture 3 hours; 3 credits. Prerequisite: AE 611. General consideration of hypersonic flow and similarity principles, hypersonic flow past a flat plate, hypersonic flow past a sphere, hypersonic flow past a cylinder, hypersonic flow past a cone, hypersonic flow past a sharp edge, hypersonic blunt-body flow. Real gas, viscous and low density effects, and consideration of nonequilibrium phenomena.

712/812. Unsteady Aerodynamics and Aeroelasticity. Lecture 3 hours; 3 credits. Prerequisites: AE 602, AE 611, and 634, or permission of the instructor. Unsteady aerodynamics and unsteady aeroelasticity; transonic and supersonic flow characteristics; Arbitrary airfoil motion, Oscillating infinite wing; Unsteady motion of finite wings; Unsteady motion of lifting bodies; Aerospatial phenomena; Unsteady aerodynamic and dynamic loads, Divergence, Control reversal, Flutter, Dynamic response.

713/813. Turbulence Modeling. Lecture 3 hours; 3 credits. Prerequisites: AE 602 and 709/809. Isotropic and homogeneous turbulence. Mixing length theories, Equilibrium turbulence, Reynolds stress turbulence, Subsonic and supersonic flows; Arbitrary airfoil motion, Oscillating infinite wing; Unsteady motion of finite wings; Unsteady motion of lifting bodies; Aeroelastic phenomena; State and dynamic loads, Divergence, Control reversal, Flutter, Dynamic response.

714/814. Aerodynamic Flow Control. Lecture 3 hours; 3 credits. Prerequisites: AE 602 and 720/820. Introduction and definitions, Goals, Passive and active control methodologies and techniques, Flow separation control, Drag reduction control techniques, Flow transition control, Micro-electro-mechanical systems (MEMS) and macroscopic morphing. Design optimality and efficiency metrics, robust design, restrictions on randomization. Laboratory exercises include RANS/LES to fundamental control.

720/820. Computational Fluid Dynamics II. Lecture 3 hours; 3 credits. Corequisite: AE 602. Prerequisite: AE 620. Classifications of Numerical Methods for CFD, Euler equations; conservative form of the Navier-Stokes equations; grid generation; central difference schemes; finite volume concepts; Navier-Stokes equations; wall boundaries; flux-difference and TVD schemes; boundary conditions.


733/833. Nonlinear Aerospace Structures. Lecture 3 hours; 3 credits. Prerequisites: AE 631 and 634. Classical and finite element analysis methods for nonlinear aerospace structures of beam, plate and shell shells. Application to problems of large bending deflection, thermal post-buckling, large amplitude free vibration, nonlinear panel flutter, and nonlinear random response.

734/834. Structural Vibrations II. Lecture 3 hours; 3 credits. Prerequisite: AE 634. Static and dynamic response of multibody structures subjected to random excitations. Analysis of the transient and stationary response of structural systems of aeroelasticity. A course project or 740/840. Formulation of fluids/dynamics interaction problems, Initial and boundary conditions, 3D aerospaces and control.

744/844. Active Control of Structures. Lecture 3 hours; 3 credits. Prerequisites: AE 634 and 650. Fundamentals of structural dynamics, control systems, and digital signal processing. Analysis of control methods applied to vibrating structural systems. Integration of space and time domain approaches and application to the study of structural response through the design and characterization of transduction devices, distributed strain actuators-sensors, and smart materials. Relationships between physical, modal, and wave domain models for structural dynamics and control. Feedback/Forward-Feedback control, control of waves in structures, theory and implementation of active and passive vibration isolation systems, active control of structurally radiated sound.

750/850. Autonomous and Robotic System Analysis and Control. Lecture 3 hours; 3 credits. Prerequisites: AE 631, 634, and 645. Fundamentals of control system design and solution including inertial/gravitational/aerodynamic/propulsive loads, linear longitudinal and lateral-directional motion equations, nonlinear simulation. Flight control system design as analysis incorporating flying quality requirements, linear conventional/contemporary and flight control systems implementation of control and guidance functions, validation with simulation/linearization, gain scheduling.

761/861. Space Flight Dynamics and Control. Lecture 3 hours; 3 credits. Prerequisites: AE 604, 650. Principles governing the dynamics and control of vehicles in atmosphere flight. Equations of motion development and solution including inertial/gravitational/aerodynamic/propulsive loads, linear longitudinal and lateral-directional motion equations, nonlinear simulation. Flight control system design and analysis incorporating flying quality requirements, linear conventional/contemporary and flight control systems implementation of control and guidance functions, validation with simulation/linearization, gain scheduling.

783/883. Acoustics. Lecture 3 hours; 3 credits. Prerequisite: AE 611. Equations of aeroacoustic wave propagation; aerodynamic sources; acoustic analogy; effects of airflow on sound; jet acoustics; linearization; introduction to numerical simulation, boundary conditions and time-series analysis.

784/884. Multidisciplinary Design and Optimization. Lecture 3 hours; 3 credits. Prerequisite: AE 720/820 or 740/840. Formulation of fluidologies/dynamics interaction problems, Initial and boundary conditions, 3D aerospace, analysis and control.

795/895. Topics in Aerospace Engineering and Engineering Mechanics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Individual analytical, computational and/or experimental study in an area selected by the student. Supervised and approved by the advisor.

899. Dissertation Research in Aerospace Engineering and Engineering Mechanics. 1-6 credits. Prerequisite: permission of the instructor. Dissertation research in aerospace engineering or engineering mechanics leading to the doctoral degree.

999. Aerospace Engineering 999. 1 credit. Audit only. Prerequisite: permission of the instructor. Used by graduate students to maintain active status during the final semester prior to graduation if they are not formally enrolled in course work. (Students must complete Student Registration Request for additional information.)

### African-American Studies—aAST

#### 100. Introduction to African American Studies

#### 3 credits. An interdisciplinary examination of African American experience in America. The course examines the historical and contemporary conditions of African American people. It also explores the various modes of artistic expression, values and philosophical underpinnings of African American culture.

#### 368. Internship

3 credits. Prerequisite: permission of program director. Individual practical experience in community-based organizations, public bureaucracies, and nonprofit organizations. These courses are open to majors and non-majors. Ethnic studies majors may take these courses to satisfy requirements for the major.

#### 395, 396. Topics in African American Studies

#### 3 credits. Prerequisites: AAST 100 or permission of the instructor. These courses are open to majors and non-majors. Ethnic studies majors may take these courses to satisfy requirements for the major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

#### 497/597. Independent Study

1-3 credits. Prerequisites: junior standing or permission of instructor. Students are exposed to opportunities to conduct independent research and/or study in areas focusing on the cultural and social aspects of African American experiences in the U.S. and the African Diaspora.
American Studies—AMST

300. Perspectives in American Studies. Lecture 3 hours; 3 credits. A survey of the major themes and trends in American Studies, with an emphasis on interdisciplinary approaches. Course can be used to fulfill a requirement in the American Studies minor.

Anthropology—ANTR

Anthropology courses are taught by members of the Department of Sociology and Criminal Justice.

110S. Introduction to Anthropology. Lecture 3 hours; 3 credits. An introduction to the major perspectives, methods, and areas of study of the discipline of anthropology. (qualifies as a CAP experience)

226S. Honors: Human Origins and Ways of Life—An Introduction to Anthropology. Lecture 3 hours; 3 credits. A special honors section of ANTR 110S. Open only to students in the Honors College.

300. Human Cultures Around the World. Lecture 3 hours; 3 credits. ANTR 110S. A cross-cultural examination of human economic, social, and ideological behavior, with an aim of seeing how both human cultural diversity and the various elements of culture (e.g., trade, marriage practices, witchcraft, etc.) go together to make coherent whole cultures.

303. Biological Anthropology. Lecture 3 hours; 3 credits. Prerequisite: ANTR 110S. Human physical and cultural evolution from our earliest primates through the appearance of anatomically modern humans.

304. Digging Up the Past. Lecture 3 hours; 3 credits. Prerequisite: ANTR 110S or completion of the social science requirement or permission of the instructor. A comprehensive study of the philosophical and scientific foundations of archaeology and of a general prehistory through the appearance of anatomically modern humans.

305. North American Archaeology. Lecture 3 hours; 3 credits. Prerequisite: ANTR 110S or completion of the social science requirement or permission of the instructor. The study of the prehistory of native cultures north of Mexico from the peopling of the New World to contact with Europeans.

306. North American Indians. Lecture 3 hours; 3 credits. Prerequisites: ANTR 110S or historical perspective, or permission of the instructor. A regional examination of aboriginal culture in: The Americas at the time of European contact, with an update on what has happened to these cultures since.

307. Art in Cross-Cultural Perspective. Lecture 3 hours; 3 credits. Prerequisite: ANTR 110S, completion of the social science perspective or permission of the instructor. An examination of the evolution of the socialization and perpetuation of sex roles in different societies around the world. The course investigates issues of gender and sexuality through art's life.

369. Practicum. 1-3 credits. Prerequisite: permission of the department. (qualifies as a CAP experience)

377, 378. Extracurricular Studies. 1-6 credits each semester. Prerequisite: Approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities. Available for pass/fail grading only.

395, 396. Topics in Anthropology. 1-3 credits each semester. Prerequisites: permission of instructor. A study of selected topics, designed for nonmajors, or for elective credit within a major. These courses will be offered to be a course schedule, and will be more fully described in information distributed to all academic advisors.

495/595, 496/596. Topics in Anthropology. 1-3 credits each semester. Prerequisite: senior standing or approval of the department chair. A study of selected topics designed for either major or nonmajor students. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

497/597, 498/598. Tutorial Work in Special Topics in Anthropology. 1-3 credits each semester. Prerequisites: senior standing and approval of department chair. Independent research in an area to be selected under the direction of an instructor. Conferences and papers as appropriate.

ART COURSES

279. Fundamentals of Digital Art. Lecture 1 hour; laboratory 3 hours; 3 credits. An introduction to the Macintosh computer and operating system and its applications to visual arts project production. Includes an overview of basic computer theory, with instruction in print multimedia and imaging for visual communications.

281. Crafts 1: Fibers. Lecture 1 hour; studio 5 hours; 3 credits. An introduction to various looms, tools, materials and techniques used in weaving and fabric dyeing; individual design projects.

289. Crafts 1: Metalsmithing and Jewelry. Lecture 1 hour; studio 2 hours; 3 credits. An introduction to the basic tools, materials and techniques used in centrifugal casting, soldering and piercing. Individual projects in silver, brass and copper.

302. Design Application. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 202 and Pre- or corequisites: ARTS 304. A study of basic design concepts to the solution of functional and environmental problems. Offered once per year.

304. Color. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: junior standing or permission of instructor. A study of the underlying principles of color interaction, color selection, contrast and harmonies, relationships between light, color and vision, as well as the basics of pigments, mixing, and color terminology. An option for the Cluster, Aesthetics in Art and Science.

305. Elementary Art Education. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: junior standing. Designed for nonmajors, or for elective credit within a major. This education course covers the conceptual foundations of art education in the early years and an exploration of the cross-disciplinary nature of art education in the elementary school teaching. Demonstrations, workshops, and discussions place special emphasis on the scope, sequence, and philosophy of art in the elementary curriculum.

311. Advanced Photography. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 202. Further investigation of visual content and expression through regular group assignments and critiques with attention to advanced photographic techniques and applications to visual arts project production.

331. Drawing; Composition. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 231. Continuation of ARTS 231 with emphasis on composition.

341. Painting; Composition. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 241. Introduction to various compositional approaches as specifically applied to painting.

350. Printmaking. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 202 or 203. Further investigation of the planned work experience with sign, symbol, and image. Further investigation of chosen print technique (screenprint, lithography, relief, or intaglio) with special attention to the implementation of color.

361. Advanced Sculpture. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 275 and any introductory printmaking course (ARTS 251, 252, 253, or 254). May be taken for repeat credit. Further investigation of chosen print technique (screenprint, lithography, relief, or intaglio) with special attention to the implementation of color.

430. Intermediate Ceramics. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 263. An intermediate course in ceramics with an emphasis on more sophisticated thrw throwing, hand-building and throwing toward the development of a personal image. The class includes glaze chemistry, firing procedures, ceramic history and contemporary ceramics.

437. Cooperative Education. 1-3 credits. May be repeated for credit. Prerequisite: approval of the department chair and Career Management. Available for pass/fail grading only. Student participation for credit will be based on the creative relevance of the planned work experience as evaluated and determined by the chair and approval of Career Management. Evaluation and approval must occur prior to the semester in which the work experience will take place (qualifies as a CAP experience).

495, 496. Topics in Sculpture. 1-3 credits each semester. Prerequisites: permission of instructor. A study of selected topics designed for either major or nonmajor students. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

497/597, 498/598. Tutorial Work in Special Topics in Art. 1-3 credits each semester. Prerequisites: senior standing and approval of department chair. A study of selected topics designed for either major or nonmajor students. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

499/599. Art Studies. 3 credits each semester. Prerequisite: senior standing or approval of the department chair. A study of selected topics designed for either major or nonmajor students. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

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376. Typographic Design. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 279. Junior standing, or permission of the instructor. Introduction to the subject/technique to be selected under the advisement of the instructor. Individual conferences with the instructor will be arranged weekly. The student will present a final portfolio of work to the instructor at the end of the course. 431/531. Drawing: Studio. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 331. Further concentration of study will be made on the development of individual body of work exploring preferred concepts, subject matter, techniques, and media. May be repeated for credit. 432/532. Figure Drawing Anatomy. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 331 or permission of instructor. An investigation into the interrelationships of the aspects of the structural, skeletal and muscular systems of the body. Anatomical study will be related to drawing from the live model. 441. Advanced Painting: Special Problems. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 431. Examination of the student's approaches to the painting process. Frequent critiques. May be taken for repeat credit. 450/550. Printmaking Studio. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 360 or permission of the instructor. Experimental work in selected print media. May be taken for repeat credit. 461/561. Sculpture Studio. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 361 or 363, and permission of the instructor. Experimental work reflecting individual initiative. 463/563. Advanced Ceramics. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 263 and 363. An advanced course for Ceramics majors. Students will engage in guided independent research, developing their own direction by investigating clay bodies, glazes, firing methods and contemporary ceramic imagery. Students will produce illustrations using vector, raster, and 3D software with Freehand, Photoshop and Cinema 4D XL applications. (Offered once every 2 years.) 381. Crafts II. Fibers. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 281. An introduction to pattern drafting, advanced loom technique, off-loom weaving, and fabric painting. 391. Crafts II. Metalsmithing and Jewelry. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 291. Additional techniques in casting and soldering with an introduction to basic metal-forming techniques of raising and forging. 395/396. Topics in Studio Art. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: appropriate survey or introductory course or permission of the instructor. A study of selected topics of interest to majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. 400. Senior Show. Lecture 1 hour; studio 5 hours; 3 credits. Senior requirement for all B.F.A. majors. A study of gallery practice. Students will plan, publicize, and participate in an exhibition with the instructor. Supervision culminates with group exhibitions of work by the members of the senior class. Seniors with a graphic design emphasis take ARTS 401. (Offered once every 2 years.) 401. Design Portfolio. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 471. The preparation and presentation of one's portfolio. 474. Advertising Design. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 202, 279, 304, and junior standing or permission of the instructor. Experimental work in selected print media. Students will solve complex design problems using multiple pieces coordinated to meet an overall communications objective. 473/573. The Book. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisites: ARTS 202, 279, 304, and junior standing. An examination of the book as a work of art. Lecture sessions will examine historical and technical aspects of book design and production. Laboratory sessions will be devoted to the design and production of books, such as student involvement page design, paper selection, printing and binding. (Offered once every 2 years.) 474/574. Advertising Design. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 370 and junior standing or permission of instructor. Provides a basic understanding of the practical and theoretical principles that are necessary to design and produce effective advertising. Problems will be assigned to local and national retail, institutional and corporate advertising. Print, direct mail, radio, and television media production will be covered. 475/575. Editorial Design. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 370 or permission of the instructor. An examination of the problems associated with the conception, design, and layout of newspapers, newsweeklies, and magazines. Analysis is predicated on editorial position, content, audience, frequency, budget, and production methods. 477. Hypermedia. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 367. Prerequisites: ARTS 370. This course will present the computer as a medium for visual communication and will emphasize on producing interactive documents. Various media—photography, typography, videography and traditional and alternative art media—will be used in the creation of a controlling and displaying device. Communication theory and creative problem-solving methods will be presented as part of the course. 481/581. Crafts III: Fibers. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 381. Advanced work in pattern drafting, loom techniques, off-loom weaving and fabric painting. 491/591. Crafts III: Metallsmithing and Jewelry. Lecture 1 hour; studio 5 hours; 3 credits. Prerequisite: ARTS 391. Further exploration in casting and soldering with concentration in the metal-forming techniques of raising and forging. Additional introduction to the techniques of working in steel.
influenced styles in painting, sculpture, photography, painting, sculpture, the decorative arts, and architecture. Beginning in the 1880's and continuing through the present, the art world has been challenged internationally. The theories in art, design, and architecture were codified and will be more fully described in a booklet distributed to all academic advisors.

495/595, Topics in Humanities. 3 credits. Prerequisite: junior standing or permission of the instructor. An interdisciplinary study of selected topics in the humanities. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

795/895, Topics in Arts and Letters. 1-3 credits. Prerequisite: advanced graduate standing. Seminar on special interdisciplinary topics for small groups of qualified students.

797. Tutorial Work in Arts and Letters Topics. 1-3 credits.

Asian Studies—ASIA

460. Major Issues in Asia. Lecture 3 hours; 3 credits. Prerequisites: selected international and junior standing, or permission of the instructor. As the core course for the Asian Studies minor, the course examines the most salient social, economic, environmental, and political issues in Asia from multidisciplinary and interdisciplinary perspectives. The course focuses on three major geographic areas of Asia—East Asia, South Asia, and Southeast Asia.

461. Asian Studies Capstone Seminar. Lecture 3 hours; 3 credits. Prerequisites: HIST 101H and junior standing. The course helps students synthesize the knowledge they have learned from the undergraduate courses in the program. Students will participate in seminar discussions, write a capstone research paper, and present the paper in class.

495/595, Topics in Asian Studies. 1-3 credits. Prerequisites: appropriate survey course or permission of the instructor. This course is designed for small groups of qualified students to conduct advanced study of selected topics on Asian Studies, topics which may not be taught in regularly scheduled classes. The description of the course for each offering will appear in the course schedule booklet that is distributed to each advisor.

Arts and Letters—AL

The Arts and Letters designation has been established to facilitate the offering of interdisciplinary courses in the College of Arts and Letters. These courses are coordinated through the Office of the Dean of the College of Arts and Letters.
Biological Sciences—Biol

Professors J.L. Musselman (Chair of the Department of Biological Sciences), J. Friday (Assistant Chair for Administration), D.M. Dauer, P.F. Day, Jr., AS. Gordon, J.R. Holsinger, W.J. Reseitl, A.H. Savitzky (Program Graduate Director: Molecular Biology and Biotechnology), and R.S. Swanson (Graduate Program Director for Biomedical Sciences), Associate Professors K.E. Carpenter, K.A. Carson, B. Hecker (Program Graduate Director - Master's Program) K.K. Nesius (Assistant Chair for Academic and Chief Departmental Advisor), C. J. O'egrood, P.R. Ratafia1, F.W. Stevens (Pre-Health Advisor), N.L. Wade, and D.A. Waller. Assistant Professors I. Bartol, and R.A. Cooper. Senior Lecturer K.S. Kilburn. Instructor I. Bolek.

1. Basic Bacteriology. Lecture 3 hours; laboratory 2 hours; 4 credits. A course designed to acquaint the student with the functions of normal and disease causing microorganisms. Emphasis is placed on microorganisms as etiologic agents in disease, on practical methods of disinfection, and on the factors of infection and immunity.

108N, 109N. Life Science I, II. Lecture 3 hours; laboratory 3 hours; 4 credits each semester. An introductory biology course for nonmajors. 108N focuses on science process, ecology, evolution, biodiversity and conservation. 109N focuses on human biology, including infectious disease; diet, exercise, and health; and human genetics and development. BIOL 108N or 109N cannot be substituted for BIOL 115N or 116N.

115N, 116N. General Biology. Lecture 3 hours; laboratory 3 hours; 4 credits each semester. Prerequisite: placement test. BIOL 115N and 116N emphasize the characteristics and basic chemistry of living systems, cell exchange, major tissues and their roles, gaseous and nutrient exchange and metabolism, and autotrophic and heterotrophic nutrition. 116N emphasizes molecular and cellular reproduction, transmission of genetic information, adaptation and speciation, plant and animal phylogeny, and human reproduction and development. A student receiving a credit for 115N or 116N cannot receive credit for BIOL 108N or 109N, respectively.

122N/123N. Honors: Life Science I, II. Lecture 3 hours; laboratory 3 hours; 4 credits. Open only to students in the Honors College. A special honors version of BIOL 108N/109N.

126N/127N. Honors: General Biology. Lecture 3 hours; laboratory 2 hours; 5 credits. Open only to seniors in the Honors College. A special honors version of BIOL 115N/116N.

190. Introduction to Human Anatomical and Physiology. Lecture 3 hours; 3 credits. A course in human anatomy and physiology emphasizing all body systems and their processes. This course may not be used for the departmental requirement in physiology.

203. Evolution. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N, 116N or permission of the instructor. A study of the concepts and mechanisms of evolution in both animals (including humans) and plants. Recommended for its cultural value to all students.

205. Principles of Ecology. Lecture 3 hours; 3 credits. An introduction to the basic concepts of ecology for both biology and environmental science majors. The course is introduced with respect to terrestrial, aquatic, and marine environments.


220. General Botany. Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisites: BIOL 115N, 116N. A general introduction to the structure, function, ecology, and diversity of plants.

221. Field Botany. Lecture 2 hours; laboratory 5 hours; 4 credits. Prerequisites: BIOL 115N-116N. Identification, ecology and uses of native plants and mushrooms. Most classes are held on University grounds. Special students only.

246. Plant Geography. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N, 116N. The distribution and characteristics of major plant community types in North America and elsewhere. Requirements for Special Students only.

250-251. Human Anatomy and Physiology I and II. Lecture 3 hours; laboratory 3 hours; 4 credits each. 250 is prerequisite for 251. Emphasis is placed in the gross anatomical relationships and the molecular, cellular, physiological, and metabolic processes of the integumentary, muscular, and nervous systems. 251 emphasizes the physiology and pathophysiology of the heart, pulmonary, renal, endocrine, and reproductive systems. BIOL 250-251 cannot be used for the departmental requirement in physiology.

270. Cell Biology. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N and 116N. Pre- or corequisite: CHEM 115N. A comprehensive course in the structural and functional features of cells, including prokaryotic and eukaryotic cells. It emphasizes cell organelles, intracellular and extracellular signaling molecules, and metabolic pathways. The course is not open to students who have completed BIOL 115N-116N or BIOL 109N.

300. Parasitology. Lecture 2 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 115N, 116N. A basic course which treats parasitism as one of several biological interactions, emphasizing morphology, development, and physiological adaptations to parasitism, host specificity, immunity, parasitic life cycles, and evolution of parasitism. Requires active participation in the laboratory.

301. Comparative Anatomy of the Chordates. Lecture 2 hours; laboratory 6 hours; 5 credits. Prerequisites: BIOL 115N, 116N. This course is an advanced introduction to the comparative anatomy of chordates, with an emphasis on the vertebrates. Changes in the function and adaptive significance of structures through time will be considered, with major emphasis on representative species is introduced and compared in the laboratory.

307. Invertebrate Zoology. Lecture 2 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 115N, 116N. A comprehensive examination of the invertebrate phyla with emphasis on classification, morphology, phylogeny, and general biology.

312. Cellular Physiology. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisites: BIOL 115N, 116N and CHEM 311-313. A basic course in physiology at the cellular level of organization. Includes discussions of cell structure and function, osmosis, membrane transport, enzymes, photosynthesis, respiration and intermediary metabolism, movement, and irritability.

314. Developmental Biology. Lecture 3 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 115N-116N or 108N-109N. A study of the processes of development in the general framework of evolutionary biology. Topics include the study of gametogenesis, fertilization, cleavage and morphogenesis. Laboratory emphasizes the morphological features of the developing embryo. Prerequisite: BIOL 108N, 109N.

315. General Microbiology. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisites: BIOL 115N, 116N; CHEM 311-313 recommended. Designates course to be a general survey of the nature and diversity of microorganisms (especially the bacteria but also including viruses and fungi), the roles and functions in the environment, and their application in biological research. Laboratories emphasize fundamental techniques in culturing, studying and identifying microorganisms.

316. General Ecology. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisites: BIOL 115N, 116N. A field-oriented general introduction to the basic principles and concepts of ecology. Recommended as the basic course for field-oriented students. The course includes plants and animals; terrestrial and aquatic environments. A weekend field trip is required.

318. Marine Ecology. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N-116N or 108N-109N. A survey of the marine life, ecology and adaptations of marine organisms. The course is designed to broadly introduce students to life in the oceans and the many special features of marine species that have evolved in the Earth's oldest and most extensive ecosystem.

320. Genetics. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N-116N. A study of major advances in the field of genetics and their implications. The course emphasizes the interaction of genetics and molecular biology. labs. Laboratory emphasizes fundamental techniques in culturing, studying and identifying microorganisms.

368. Internship. 3-6 credits. Prerequisite: approval by department chair. Available for pass/fail grading only. Student participation for credit based on satisfactory completion of the internship. Prerequisite: approval by the instructor. The course concerns the basic biology of birds, including field identification, capture, study and release of migratory birds. The project is approved, the student will conduct the work under faculty supervision. Prerequisite: approval by the instructor. The course concerns the basic biology of birds, including field identification, capture, study and release of migratory birds. The project is approved, the student will conduct the work under faculty supervision.

* Dual Appointment

1000/001. General Chemistry. Lecture 3 hours; laboratory 4 hours; 4 credits each semester. This course is recommended for students majoring in chemistry, physics, biology, and other areas requiring an understanding of chemical principles. The course provides a general overview of the fundamental concepts of chemistry, including atomic structure, periodic table, chemical bonding, and chemical reactions. Prerequisites: BIOL 250-251 or permission of the instructor.
243/244. Comparative Animal Physiology. Lecture 3 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 115N, 116N. An introduction to the basic mechanisms by which different animals function. How organisms acquire and use energy, how they interact with their environment, and exchange gases and wastes, receive and conduct information about their environment, and move and use energy yielding mechanisms and biosyntheses in the bacteria. The course deals primarily with energy yielding mechanisms and biosyntheses in the bacteria.

245/246. Histology. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisites: BIOL 250, 251 or equivalent. An analysis of the microscopic structure of mammals (especially human) tissues and organs. Emphasis is placed on microscopic identification of tissues and cells.

247/257. Neurobiology. Lecture 3 hours; 3 credits. Prerequisites: BIOL 250/251 or 301. Survey of current areas of neurobiology including evolution of the nervous system from invertebrates through primate and mechanisms of nervous system function such as sensation and biological clocks.

248/258. Physiological Ecology of Animals. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N and 116N. An integrative approach to understanding how animals function in and respond to their environment. Emphasis will be placed on periodic aperiodic and aquatic exposure, osmotic stress on crustaceans in brackish waters, sensory adaptations in freshwater fish, evolutionary adaptation to desert climates, and respiratory adaptation by parasites are among the topics that will be discussed.

421/521. Microbial Physiology. Lecture 3 hours; 3 credits. Prerequisite: BIOL 315. Examination of bacterium-host interactions with an emphasis on how bacteria cause disease, particularly the means by which the bacterium is able to circumvent host defenses mechanisms.

431/531. Mammalogy. Lecture 3 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 115, 116N. An introductory course in either ecology or evolution and junior standing or permission of the instructor. The course deals with the ecology, behavior, distribution, physiology, diversity, and evolution of mammals.

433/533. Cave Biology. 4 credits. Prerequisite: permission of the instructor; basic knowledge of ecology, invertebrates, and geology preferable. An examination of the distribution, ecology, and evolution of subterranean organisms and ecosystems. Four-day field trip to selected caves and stalactite and stalagmite palaeoecology.

438/538. Dendrology. Lecture 2 hours; laboratory 5 hours; 4 credits. Prerequisite: BIOL 220 or equivalent. The study of trees, their identification, ecology, wood structure and uses.

439/539. Microbial Physiology Laboratory. 4 hours; 2 credits. Prerequisite: or corequisite: BIOL 425 or permission of the instructor. A study of the laboratory and experimental methodologies of microbial metabolism.

441/541. Animal Behavior. Lecture 3 hours; recitation 1 hour; 4 credits. Prerequisites: BIOL 115N, 116N, an introductory course in either ecology or evolution and junior standing or permission of the instructor. An examination of all facets of animal behavior with special attention to its evolution and ecological significance. Course emphasizes the observational and experimental techniques used to study behavior and the major conceptual models guiding past and current research.

442/542. Marine Ecology Laboratory. 4 hours; 2 credits. Corequisites: BIOL 220, 425. A laboratory-based course that includes methodology and instrumentation with field trips associated with various marine habitats. An extended field trip of several days is required.

443/543. Environmental Impact Assessment. Lecture 3 hours; 3 credits. Prerequisite: biology major or permission of the instructor. The study of the historical and mathematical calculations pertaining to environmental impact assessment. Emphasis will be placed on ecological concerns and management of tidal and estuarine habitats and estuarine and estuary habitats. Assignments will include evaluation of environmental impact conditions within this region.

444/544. Marine Biology. Lecture 2 hours; laboratory 6 hours; 5 credits. Prerequisites: BIOL 316 and 331. The application of quantitative techniques and experiments in marine ecosystems, with emphasis on population and community ecology. A two-week long research trip to a marine laboratory is required.

445/545. Community Ecology. Lecture 3 hours; 3 credits. Prerequisite: BIOL 316 or equivalent. The goal of this course is to introduce and evaluate both classical and modern approaches to community ecology. This can only be achieved by examining those processes (biotic and abiotic) that structure ecological communities, and by developing a behavioral model that objectively weigh the evidence presented in support of these paradigms.

446/546. Integrative Biomechanics. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N, 116N; recommended courses: PHYS 111N, 112N. The principles of fluid and solid mechanics will be used to study animal systems to understand how organisms deal with the immediate physical world and its accompanying constraints. A diverse range of topics will be covered, including models of flight in insects, jet propulsion in squid, flow within blood vessels, forces on intertidal organisms, and the use of materials, and energy storage during terrestrial movement.

448/548. Population Ecology. Lecture 3 hours; 3 credits. Prerequisite: BIOL 315 or permission of the instructor. This course emphasizes population growth dynamics, population interactions, and sampling methods. Both plant and animal populations are discussed.

450/550. Principles of Plant Ecology. Lecture 2 hours; laboratory 5 hours; 4 credits. Prerequisites: BIOL 205 or 316, and senior standing. A weekend field trip is required. Course covers the general theoretical concepts in plant ecology with statistical methods. The structure, development, processes, and history of plant communities are studied.

461/561. Human Cadaver Dissection. Lecture 2 hours; laboratory 4 hours; 4 credits. Prerequisite: BIOL 250 or 251 or equivalent. Study human cadaver in order to learn all major systems. All exams will be practical tests using human tissue. The major emphasis will be on hands-on lab work with clinical application to injuries and surgery.

473/573. Herpetology: The Biology of Amphibians and Reptiles. Lecture 4 hours; 4 credits. Prerequisite: BIOL 115N, 116N and junior standing or permission of the instructor. The biology of amphibians and reptiles, emphasizing their evolution, classification, and morphological and ecological adaptations. Field trips and laboratory exercises introduce techniques for observation, collection, care, and study.

478/578. Microbial Ecology. Lecture 3 hours; 3 credits. Prerequisite: BIOL 315 or permission of instructor. The principles of microbial population, particularly bacteria, and their environment. Emphasis is placed on nutrient cycling and the influence of microbes on global ecosystems. PHY 111N or 112N, or other microbiology course. Investigate microbiology from historical perspectives to modern molecular microbiology; ecological and biomedical components; bacteria and viruses. Laboratory work will stress the design and conducting experiments and evaluating results.

487/587. Honors Research in Biology. 4 credits. Prerequisite: admission to the Honors Program and recommendation of the faculty advisor. Honors research focused on development of projects and practicums selected to meet the specific objectives of the student.

669. Internship. 3 credits. With approval of Advisory Committee.

695. Topics. 1-3 credits. A specially designed course covering specific topics in the biological, environmental, or allied health fields.

698. Research. 1-3 credits.

699. Thesis. 3 credits. This course is selected with the recommendation of the faculty chair. 702/802. Biomedical Sciences Journal Club. 1 credit. Review and discussion of current papers in the areas of biomedical sciences. Significant presentations, discussions and readings in this field required.

704/804. Disease Vector Ecology. Lecture 3 hours; laboratory 4 hours; 4 credits. Study the biology and behavior of insects, ticks and other invertebrates in the transmission of disease. Emphasis is on biochemical and physiological aspects of microbial survival in the vertebrate and invertebrate host, vector behavior. Laboratory work involves experiments to study host behaviors (non-human) are conducted and discussed in class. The laboratory will stress the importance of host behavior to transmission of disease.

705/805. Advanced Microbiology. Lecture 2 hours; laboratory 4 hours; 4 credits. Prerequisite: BIOL 315 or other microbiology course. Survey of historical perspectives to modern molecular microbiology; ecological and biomedical components; bacteria and viruses. Laboratory work will stress the design and conducting experiments and evaluating results.

707/807. Ecosystem Ecology. Lecture 3 hours; laboratory 4 hours; 4 credits. Prerequisites: BIOL 315 or permission of the instructor. Laboratory exercises introduce techniques for observation, collection, care, and study. Emphasize the design, implementation, collection, preservation, and study of ecosystems. Laboratory exercises introduce techniques for observation, collection, care, and study. Emphasize the design, implementation, collection, preservation, and study of ecosystems.

714/814-715. Biomedical Sciences Laboratory. 2 credits. Prerequisite: approval of the program director. Three laboratory rotations (6 credits) are required by the curriculum.

716/816. Endocrinology. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisite: BIOL 312 or permission of the instructor. Corequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology. Prerequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology. Prerequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology. Prerequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology. Prerequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology. Prerequisites: BIOL 312 or permission of the instructor. The biochemical interactions between hormones and related agents on vertebrate physiology with emphasis on human endocrinology.

720/820. Systematic Ichthyology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: BIOL 520. A systematic survey of fishes emphasizing life history, anatomy, identification and classification.

728/828. Simulation Models: Ecosystem and Global Applications. Lecture 3 hours; laboratory 4 hours; 5 credits. Prerequisite: a general ecology course or permission of the instructor.
Biomedical Sciences — BIMD

702/802. Medical Molecular and Cellular Biology. Lecture 3 hours; laboratory 4 hours; CHEM 111 and 313. The course provides a foundation in biochemistry and molecular biology. In-depth course covering DNA and RNA structure and function, regulation of gene expression, membrane transport and chromosome structure/function in human genetics.

703/803. Medical Biophysics. Lecture 4 hours; 4 credits. Prerequisites: CHEM 311 and 313. In-depth lecture continuing BIMD 702/802, covering carbohydrates, glycolysis, citric acid cycle, oxidative phosphorylation, lipids, nitrogen metabolism, hemoglobin, iron, calcium, vitamins, and nutrition.

706/806. Pharmacology. Lecture 4 hours; laboratory 3 hours; 5 credits. Prerequisite: CHEM 541. Lectures, discussions, and computer laboratory study of the mechanisms of drug action and the pharmaceutical impact of these mechanisms. Application of this knowledge in the context of drug development and evaluation in pharmacotherapy.

708/808. Medical Neuroscience. Lecture 4 hours; laboratory 3 hours; 5 credits. Prerequisite: BIOL 250/251. Survey course in neuroanatomy and neurophysiology with lectures and laboratories. Basic structure and function of the nervous system is covered with clinical emphasis on psychosomatic examination localization.


725/825. Neurocytology-Ultrastructure of the Nervous System. Lecture 2 hours; laboratory 4 hours. Prerequisite: BIOL 320. A study of the histology and ultrastructure of nerve cells with emphasis on normal and pathological processes. Introduction to the construction and analysis of simulation models with emphasis on ecosystem, landscape and regional patterns. Examination of mechanisms of drug interactions with the central nervous system.

786/886. Neuropharmacology. Lecture 3 hours; 3 credits. Prerequisite: CHEM 541. Recent advances in the field of neuropharmacology with application to basic research in cancer biology. Format is designed for reading and interpretation of scientific literature in a broad context.

785/885. Current Topics in Tumor Immunobiology. Lecture 2 hours; 2 credits; Prerequisites: CHEM 541, BIMD 702/802 and permission of the instructor. Advanced coverage of processes of carcinogenesis and disease processes with emphasis on physiology, biochemistry and pharmacology.

786/886. Advanced Cardiovascular Sciences. Lecture 3 hours; laboratory 4 hours. Prerequisite: BIMD 706/806. Advanced coverage of processes of cardiovascular function and disease processes with emphasis on physiology, biochemistry and pharmacology.

787/887. Current Topics in Cardiovascular Sciences. Lecture and laboratory 4 hours; 1 credit. Prerequisite: CHEM 541 and BIMD 702/802. A survey of current areas of cardiovascular research.

785/885. Neuropharmacology. Lecture 3 hours; 3 credits. Prerequisite: BIOL 541. Recent advances in the field of neuropharmacology with application to basic research in cancer biology. Format is designed for reading and interpretation of scientific literature in a broad context.
Laboratory rotation with a pre-designated faculty member to tumors, and vaccination.

101. Medical Microbiology - Immunology. Lecture 2 hours; laboratory (optional); 2 credits. Prerequisites: BIMD 802 and 803. The course covers basic and clinical aspects of immunology and an understanding of how the immune system functions, the structural and genetic basis of antibody specificity and diversity, the roles of different functional sets of lymphocytes in antibody and cell-mediated immune response, and the basis of immune regulation. The second part of the course emphasizes the multifaceted nature of the immune system in human disease (allergies, immunodeficiency, and infections), and immunologic aspects of organ transplantation, immunity to tumors, and vaccination.

101N-102N. Biomedical Sciences Laboratory. 2 credits. Laboratory rotation with a pre-designated faculty member in which student obtains hands-on experience. Designed for students in the School of Medicine. T. L. Isehorn (Chair) and V. E. Austin-Minor, C.A. Bayse, R. F. Dias and J.L. Poutsma. Program Director), M.S. Elliott, P.A. Pleban (Assistant President for Academic Affairs), K. Mopper, and J.H. Yuan. Lecture 1.5 hours; laboratory 6 hours; 5 weeks; 2 credits. Prerequisite: CHEM 115N-116N. Introduction to medically important fungi and parasites that infect major organ systems; properties of the organism, pathogenesis and immunity, epidemiology, clinical manifestations, laboratory diagnosis and treatment, prevention and control.

102-103. Microbiology and Immunology. Lecture 3 hours; laboratory 2 hours; 3 credits. Prerequisites: CHEM 541, BIMD 706/806, BIOL 716/816, BIOL 590. An in-depth evaluation of the role of proteins and receptors in regulation of cell to cell communication. Students will have readings in current scientific literature.

103. Experimental Physical Chemistry. Lecture 3 hours; laboratory 3 hours; 5 weeks; 2 credits. Prerequisite: CHEM 314 and MATH 231, 232, 233. The course will cover the theory, application and use of modern instrumental atomic and molecular spectroscopic methods for qualitative and quantitative chemical analysis.

105. Selected Topics in Molecular Biology. 3 credits. Prerequisite: CHEM 541. Student presentation and discussion with the faculty. Emphasis is placed on theory and techniques of research in eukaryotic gene structure and organization, regulation of gene expression, control of transcription and translation, and post-translational processing. Students will read scientific papers, engage in class discussions and make oral presentations.

181. Biochemical and Cellular Endocrinology. Lecture 3 hours; 3 credits. Prerequisites: CHEM 541, BIMD 706/806, BIOL 716/816, BIOL 590. In-depth evaluation of the role of proteins and receptors in regulation of cell to cell communication. Students will have readings in current scientific literature.

184. Special Topics in Molecular and Cellular Immunology. 2 credits. Prerequisite: BIOL 509. A critical review of current scientific papers in diverse areas of immunology, including transplantation and tumor immunology, autoimmunity, and pathogenesis. Student presentations, discussions and readings in these areas.

185. Viruses and Filtrates. 3 credits. Prerequisite: CHEM 541. Mammalian DNA and RNA viruses. Viral structure, classification, replication, gene regulation, pathogenesis, tumorigenesis, and immunology are included. Research methodologies will be covered.

185-186. Tumor Biology. Lecture 3 hours; 3 credits. Prerequisite: CHEM 541. Follows introductory cancer biology. Following an introduction to the pathology and natural history of cancer, specific topics including tumor cell biology and diagnosis are discussed. The application of basic and advanced statistical methods for biomedical research. The course will also introduce students to the use of various statistical packages to design experiments, analyze data and to understand, use, and interpret results from the literature.

257CHEMISTRY AND BIOCHEMISTRY COURSES

280. Computer Applications in Chemistry. Lecture 1 hour; 1 credit. Active participation in one of several possible student-related activities. Students will be required to attend the seminar and participate in discussions, as well as to present their own work to the participants. Development of skills associated with oral presentations, slide production, and critical and logical communication will be stressed.

289. Research. 1-3 credits.

299. Dissertation. 1-6 credits.
451/551. Advanced Inorganic Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 333. Theoretical aspects of coordination chemistry: bond energy parameters, stereochemistry, acid-base theories, coordination compounds, organometallic and biomimetic compounds.

452/552. Environmental Chemistry Laboratory. Lecture 4 hours; 2 credits. Corequisite: CHEM 451/551. An introduction to natural chemical systems operating in Earth's atmosphere, hydrosphere (natural waters), and terrestrial environment, and various human activities that may have an impact on them. Specific topics to be discussed include: origin and evolution of Earth and life, chemistry of the atmosphere (including the ozone layer and greenhouse effect), organic and inorganic components of soil and water, the hydrologic cycle, chemical weathering, chemical speciation and complexation, and microbial activities.

453/553. Essentials of Toxicology. Lecture 3 hours; 3 credits. Prerequisites: CHEM 333, 423, 424, 425 or permission of the instructor. An introduction to fundamental principles of toxicology: dose-response relationship, toxicologic testing, chemical and biological factors influencing toxicity, organ toxicology, carcinogenesis, teratogenesis. 

485. Chemistry and Biochemistry Seminar. 1 credit. Prerequisite: senior standing. The formal presentation of a chemical or biochemistry student's work.

495. Selected Topics. 1-3 credits. Prerequisite: permission of the instructor.

497. Independent Study. Consultation and individualized study. 1 credit. Independent study may not be for more than 4 credits. 

510. Seminar. Lecture and discussion 1 hour; 1 credit.

631. Clinical Chemistry Lecture. Lecture 3 hours; 3 credits. Prerequisites: CHEM 311-314, 321-324, 321, 322, and 541. A review of advanced chemistry and methodologies of laboratory practice in the clinical laboratory. Emphasis on approach to experimental design and multivariate data analysis. Laboratory 2 hours; 2 credits. Corequisite or prerequisite: CHEM 451 or 452. 

647. Chemistry of the Changing Atmosphere. Lecture 3 hours; 3 credits. Prerequisites: CHEM 115N-116N, PHYS 112N. This course will cover the past, present, and future chemistry of Earth's atmosphere with emphasis on human impacts.

665. Biochemistry-Biophysics Colloquium. Lecture and discussion 1 hour; 1 credit. Open to science students by permission of the instructor. Papers from the current literature.

669. In-Service Practicum. 6 credits; 50 hours per credit. Prerequisite: CHEM 669. Internship experience in local hospital, forensic, or industrial laboratory. Available for pass/fail grading only.

685-693. Seminar. 1-3 credits each semester. Prerequisite: permission of the department chair. Topics representing the most recent advances in various fields of chemistry or ones which represent an interdisciplinary advancement.

695. Selected Topics. 1-3 credits each semester. Prerequisite: permission of the department chair.

698. Master’s Thesis. 3 credits.

699. Master’s Thesis. 3 credits.

701. Advanced Analytical Chemistry. Lecture 3 hours; 3 credits. Prerequisites: CHEM 333, 423. A study of the fundamentals of biochemical and instrumental analysis, including amino acids, protein quantification and isolation, carbohydrates, lipids and cholesterol, enzymeology, nucleic acids, and other techniques related to forensic science. Laboratory 4 or 6 hours; 2 or 3 credits. Corequisite: CHEM 703. This lab course consists of six to seven independent HPLC and GC methods. Students will become familiar with environmental, biosciences and industry will be stressed.

705. Applied Spectroscopy. Lecture 3 hours; 3 credits. Prerequisite: CHEM 333. An introduction to the basic principles of the instruments and methodology of modern analytical chemistry. Indices of separation methods of trace chemical analysis of environmental sciences, including spectroscopic, chromatographic, and electrochemical methods, in addition to wet chemical methods.

707. Environmental Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 333. A survey of the current status of the natural chemistry systems operating in the atmosphere, in the terrestrial environment (both water and soils), and in the oceans, and the potential effects that human activities may have on them. Specific topics include the origin and evolution of the earth and life, the chemistry of the atmosphere (including the ozone layer and greenhouse effect), the organic and inorganic components of soil and water, chemical weathering of rocks, metal complexation, bioaccumulation in soil and water, and global-scale chemical processes.

708. Clinical Toxicology. Lecture 3 hours; 3 credits. Prerequisites: CHEM 444/544. Lecture and discussion dealing with detection, diagnosis and treatment of chronic and acute poisoning incidents in humans. Regulatory guidelines for drug and poison control are presented.

709. Computational Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 333. Comprehensive overview of ab initio (quantum) calculations and quantum dynamical simulations, the two most widely used computational methods. Plus a brief overview of other computational approaches in chemistry. Laboratory 2-6 hours; 1-3 credits. Prerequisites: CHEM 541 and 543. 

717. Enzymology. Lecture 3 hours; 3 credits. Prerequisite: CHEM 441/541. Consideration of experimental methods for examining the kinetic data and rate equations from enzyme reactions, models of enzyme catalysis, comprehensive pres etation of the mechanisms of enzyme action, and studies of mechanism of enzyme action.

768/868. Internship in Clinical Laboratory Management. 1-3 credits. Prerequisites: CHEM 669, 802/803. Practical training in day-to-day direction of a clinical laboratory. At a clinical laboratory under the supervision of the laboratory director.

769. Nuclear Acids Biochemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 541 and 543 or permission of the instructor. A comprehensive presentation of the chemistry of DNA and RNA. Models of gene regulation, the control over transcription, RNA processing and translation, cell cycle control and molecular carcinogenesis.

771. Clinical Biochemistry. Lecture 1-3 hours; 1-3 credits. Prerequisites: CHEM 333 and 541. Physical characterization of macromolecules, polarized light, absorption and fluorescence, sedimentation velocity, gel electrophoresis, electrophoretic mobility, light scattering, and structural x-ray crystallography of proteins and nucleic acids.

775. Physical Biochemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 703. A survey of modern theories of reactions and mechanisms, classic thermodynamic functions, and an introduction to statistical thermodynamics.

781/881. Clinical Laboratories. 1-3 credits each semester. Prerequisite: CHEM 444/544. Laboratory 2 hours; 1 credit. A laboratory course in modern experimental methodology and instrumentation in clinical laboratory. Application of statistical procedures to methodology development, determination of referenced populations and as aid to quality control will be presented.

782. Advanced Organic Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 721 or equivalent. Chemical bonding, stereochemistry, and mechanisms related to chemical reactions will be presented.

783. Modern Synthetic Organic Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 721 or permission of the instructor. Synthetic methods involving such techniques as hydroboration, metal hydride reductions, stereospecific syntheses, and electrochemical preparations.

785. Physical Organic Chemistry. Lecture 3 hours; 3 credits. Discussion of how and why organic reactions happen and the various ways to answer these questions through experiments. Topics include molecular orbital (MO) theory, pericyclic reactions, kinetics and kinetic isotope effects.

786. Medicinal Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 631-632, 669. A study of the current status of the pharmaceutical industry. Study of the chemistry and mode of action of various medicinal and physiologically active compounds.

787. Pharmaceutical Biochemistry. Lecture 1 hour; 1 credit. Prerequisite: CHEM 631 or permission of the instructor. Thorough coverage of areas selected to meet special needs.

802/803. Biomedical Sciences Seminar. Lecture and discussion 1 hour; 1 credit each semester. This course can be repeated with the approval of the program director.

816. Biomedical Sciences Laboratory. 2 credits. With approval of the program director.

895. Selected Topics in Biomedical Sciences. Lecture 1-3 hours; 1-3 credits each semester. Prerequisite: CHEM 333. A survey of modern theories of reactions and mechanisms, classic thermodynamic functions, and an introduction to statistical thermodynamics.

897. Clinical Laboratories. 1-3 credits each semester. 

101. Beginning Laboratory. Lecture and discussion 2 hours; 2 credits. Prerequisite: CHEM 101 or permission of the instructor. Introduction to the basic principles of chemistry and the application of experimental methods to the measurement of physical properties. Laboratory 2 hours; 2 credits. Corequisite or prerequisite: CHEM 101.

102. Chemistry Laboratory for the General Student. Lecture 1-3 hours; 1-3 credits. Prerequisite: CHEM 101 or permission of the instructor. An introduction to the basic principles of chemistry and the application of experimental methods to the measurement of physical properties. Laboratory 2 hours; 2 credits. Corequisite or prerequisite: CHEM 101.

104. Introduction to Chemistry Laboratory. Lecture 1 hour; 1 credit. Prerequisite: CHEM 101 or permission of the instructor. An introduction to the basic principles of chemistry and the application of experimental methods to the measurement of physical properties. Laboratory 2 hours; 2 credits. Corequisite or prerequisite: CHEM 101.

105. Advanced Chemistry Laboratory. Lecture 1 hour; 1 credit. Prerequisite: CHEM 333. A tutorial laboratory course in modern experimental methodology and instrumentation in clinical laboratory. Laboratory 1 hour; 1 credit. Prerequisite: CHEM 631 or permission of the instructor. Subject matter includes the most recent advances in clinical chemistry.

106. Advanced Organic Chemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 333. Organic geochemistry is the study of the processes by which organic compounds are produced by photosynthesis and altered as they cycle through the soils, atmosphere, rivers, oceans, and crustal rocks. This course will include the carbon/oxygen cycles, biomarkers, organic matter diagenesis/catagenesis, analytical techniques used in organic geochemistry, and an introduction to carbon isotope fractionation.
Civil and Environmental Engineering — CEE

Professors A.O. Akan (Chair of the Department of Civil and Environmental Engineering), D. Rich (Graduate Program Advisor), D.R. Basco, W.A. Drewry, I. Ishibashi, and J. Yoon. Assistant Professors J.L. Harrell.

195. Introduction to Environmental Engineering. Lecture 1 hour; laboratory 2 hours; 3 credits. Permission of the department chair. Special topics in civil and/or environmental engineering at the introductory level.


240. Geographic Information Systems in Civil and Environmental Engineering. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: MATH 211, PHYS 231N. Introduction to engineering problems and their solutions through a study of the statics of particles and rigid bodies.

484. Geotechnical Engineering. Lecture 1 hour; 3 credits. Prerequisite: MATH 211, CHEM 231N. Introduction to engineering problems and their solutions through a study of the statics of particles and rigid bodies.

259CIVIL AND ENVIRONMENTAL ENGINEERING COURSES

295. Topics in Civil and Environmental Engineering. Lecture 1 hour; 3 credits. Prerequisite: permission of the department chair. Special topics in civil and/or environmental engineering at the basic engineering level.


305. Civil and Environmental Computation. Lecture 1 hour; 3 credits. Prerequisite: MATH 211, CHEM 231N. Introduction to computer application, release, and transport in the environment. Engineering analysis of natural systems and introduction to engineered systems control of contaminants.

295. Topics in Civil and Environmental Engineering. Lecture 1 hour; 3 credits. Prerequisite: permission of the department chair. Special topics in civil and/or environmental engineering at the basic engineering level.


305. Civil and Environmental Computation. Lecture 1 hour; 3 credits. Prerequisite: MATH 211, CHEM 231N. Introduction to computer application, release, and transport in the environment. Engineering analysis of natural systems and introduction to engineered systems control of contaminants.

323. Soil Mechanics. Lecture 3 hours; 3 credits. Prerequisite: ME 220. Corequisite: CEE 335. Fundamental engineering properties of soil and their application to earth structures and foundations. Topics include seepage, compaction, strength, and deformation characteristics of soils.

330. Hydromechanics. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Fluid properties, fluid statics and fundamentals of fluid kinematics. Steady, incompressible constant mass flow processes, fluid potential, and energy including real fluid energy losses. Turbulent, incompressible fluid flow through closed conduits and with a free surface. Introduction to thermodynamics.

335. CE Soils and Hydraulics Laboratory. Laboratory 2 hours; 1 credit. Corequisites: CEE 323, and 340. Soils and hydraulics tests, including index testing, compaction, permeability, consolidation, shear tests for soils, and pipe flow, open channel flow, hydrology, groundwater, and hydraulic structures for hydraulics.


350. Environmental Pollution and Control. Lecture 3 hours; 3 credits. Prerequisites: CHEM 11SN, MATH 211, PHYS 231N. Introduction to the fundamental principles of environmental engineering. Topics in water quantity, water and wastewater treatment, air quality, and solid waste and landfill disposal and management.

355W. Environmental Engineering Analysis. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: PHYS 231N and CHEM 11SN. Introduction to the analytical techniques used in environmental engineering analysis. Integrates field and laboratory testing with engineering analysis and management systems.

366. Public Health Engineering. Lecture 3 hours; 3 credits. Prerequisite: CEE 355W. Principles of public health engineering, including the interactions with human populations, I phase identification and transport in the environment and design of on-site wastewater treatment systems.

365. Transportation Engineering. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Planning, design, and construction of transportation facilities for goods and services.

367. Cooperative Education. 1-3 credits may be repeated for credit. Prerequisite: approval by the department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department with an advisor.

368. Internship. 1-3 credits may be repeated for credit. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department with an advisor.

430W. Civil Engineering Design Project. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: junior standing. Group design project of civil engineering at the introductory level. Emphasis varies with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience)
667. Cooperative Education. 1-3 credits (may be repeated for credit). Prerequisite: approval by the department Chair. Credit in accordance with the policy for granting credit for cooperative education programs. Available for pass/fail grading only. Student participation for credit based on the actual involvement of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place.

668. Internship. 1-3 credits. Prerequisite: approval by department Chair. Credit in accordance with the policy for granting credit for cooperative education programs. Available for pass/fail grading only. Student participation for credit based on the actual involvement of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place.

685. Topics in Civil and Environmental Engineering. Lecture 1-3 hours; 1-3 credits. Prerequisite: Permission of the department Chair. Individual analytical, experimental and/or design study selected by the student. Approved by the instructor.

697. Independent Student. 1-3 credits. Individual project, investigation under the direction of the student’s major professor.


710/810. Structural Dynamics. Lecture 3 hours; 3 credits. Introduction to the structural dynamics of systems; elastic and inelastic response of structures under dynamic loading.

711/811. Topics in Finite Elements. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Individual analytical, experimental and/or design study selected by the student. Approved by the instructor.

712/812. Advanced Reinforced Concrete. Lecture 3 hours; 3 credits. Ultimate-strength theory, yield line methods, limit design, and other relevant advanced topics in the theory and design of concrete structures.

715/815. Engineering Optimization I. Lecture 3 hours; 3 credits. Prerequisite: CEE 350. Theory and application of advanced optimization techniques in solving engineering problems such as solid mechanics, fluid mechanics and heat transfer. To provide insight into the theoretical formulation and numerical implementation of finite element methods. (cross-listed with AE 640 and ME 635)

717/817. Bridge Structures Design. Lecture 3 hours; 3 credits. Analysis and design of bridges and steel and concrete structures; design of steel and concrete members; design of foundations; determination of stability of beams, columns and frames.

721/821. Plates. Lecture 3 hours; 3 credits. Classical and modern methods in the solution of plates of various shapes and boundary conditions, continuous and axially loaded plates and plates on elastic supports. Design examples.

723/823. Advanced Soil Mechanics. Lecture hours; 3 credits. Prerequisite: CEE 323. Detailed study of shear strength of soils and its application to slope stability and embankment design and analysis. Advanced laboratory shear tests are included.

725/825. Advanced Foundation Engineering. Lecture 3 hours; 3 credits. Prerequisite: CEE 420/520. Advanced analysis and design of shallow and deep foundations and retaining structures.

730/830. Soil Dynamics. Lecture 3 hours; 3 credits. Prerequisite: CEE 325. Study of soil behavior under dynamic loadings. Laboratory and field techniques for determining dynamic soil properties and liquefaction potential. Design examples.

741/841. Open Channel Flow. Lecture 3 hours; 3 credits. Prerequisite: CEE 340. Momentum and energy principles, definition of hydraulic parameters, cross-sectional properties, flow calculations in rivers, introduction to unsteady open channel flows.


748/848. Advanced Hydrology. Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. Emphasis is on the physics of the different hydrologic processes of rainfall, infiltration, evaporation and runoff. Objective is to understand the dynamics of the underlying physical processes.

751/851. Physicochemical Treatment Processes. Lecture 3 hours; 3 credits. Prerequisite: CEE 350. Physical and chemical processes used in the treatment of water and waste water are covered. Separation, isolation and reaction processes are characterized as well as reactor engineering.

752/852. Biological Waste Water Treatment. Lecture 3 hours; 3 credits. Prerequisite: CEE 350. Use of microorganisms to treat domestic and industrial waste waters for organics and nutrient removal are studied. Characteristics of individual waste water components and the appropriate treatment processes to remove these components are covered.

754/854. Environmental Engineering Microbiology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: CEE 350. A lecture and laboratory course dealing with the study of the principles and applications of microbiology in water waste treatment, water treatment streams, self-purification and their effects in environmental engineering.

755/855. Water Quality Management. Lecture 3 hours; 3 credits. Prerequisite: CEE 350. Water quality criteria in nature and industry, and the human activities that result in contaminant input to these systems are studied. Management practices for minimizing contaminant input and for restoring contaminated waters are discussed.

756/856. Water Quality Modeling. Lecture 3 hours; 3 credits. Prerequisite: CEE 340, CEE 450 or permission of the instructor. Formulation of mathematical equations to describe the fate and transport of aqueous contaminants in dynamic surface water systems. Use of water quality computer models to predict various contamination scenarios.

761/861. Water Resources Systems Analysis. Lecture 3 hours; 3 credits. Application of systems analysis and project evaluation techniques to water resource problems including water demand forecasting, reservoir design and operation, groundwater management and water distribution system design.

768/868. Aquatic Chemistry in Environmental Engineering. Lecture 3 hours; 3 credits. Prerequisite: CHEM 117. Chemical reactions in natural and engineered systems, with emphasis placed on developing kinetic expressions and assessing chemical equilibrium. Kinetic and equilibrium expressions are applied to environmental engineering problems and other reaction the time and products of specific reactions.

780/880. Advanced Civil Engineering System Design. Lecture 3 hours; 3 credits. Prerequisite: CE 485/585. Environmental, construction, hydraulic, geotechnical and structural engineering problems solved using the linear programming techniques as simple, mixed, and integer programming linear programming techniques to solve unsteady, free-surface fluid flow and diffusion (dispersion) problems in one and multi-dimensions. Turbulence models.

782/882. Design of Coastal Structures. Lecture 3 hours; 3 credits. Prerequisite: CEE 482/582. Nonlinear wave theory and wave forces on slender piers and seawalls; design of rubber mound structures; design philosophy, initial costs, maintenance costs, optimized design using stochastic methods; design of renourished beaches. Advanced laboratory experiments included.


102/202. Structural and Environmental Engineering Experimental Design. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Graduate-level overview of engineering experimental design and analysis with emphasis on statistical methods; practical and proper statistical methods applicable to multidisciplinary, real-world civil and environmental engineering problems.

105/205. Topics in Civil and Environmental Engineering. Lecture 1-3 hours; 1-3 credits. Prerequisite: Permission of the department chair. Special topics of interest with emphasis placed on recent developments in civil and/or environmental engineering.

107. Independent Study in Civil Engineering. 1-3 credits. Prerequisite: Permission of the instructor. Individual analytical, experimental and/or design study selected by the student. Approved and supervised by the advisor.

899. Dissertation Research. 1-9 credits.

999. Civil Engineering 999. 1 credit. A one-hour audit registration required of all graduate students to maintain active registration status. Enrollment is for graduation if they are not formally enrolled in course work and have not completed all academic requirements for the degree. (Refer to the policy on Graduation 3 hour Registration Requirement for additional information.)
functions.

226S. Honors: Introduction to Human Communication. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S, or permission of the Honors College. Special honors section of COMM 200S.

295, 296. Topics in Communication. 1-3 credits each semester. A study of selected topics designed for nonmajors, or for elective credit. These courses will be more fully described in a booklet distributed to all academic advisors.

300. International Sojourning. Lecture 3 hours; 3 credits. Prerequisites: STAT 130M, COMM 200S and six hours of 300-400 level communication courses or permission of the instructor. This introduction to international communication research from a social science perspective. Experiment, survey, content analysis and observational approaches are covered. Students will learn statistical data collection and data analysis techniques.

303. Public Relations in Communication Industries. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. A study of interactions within and among communication workplaces and the public. Attention is given to the media, promotions, community relations, and public information.

304. Advanced Public Speaking. Lecture 3 hours; 3 credits. Prerequisite: COMM 101R. An analysis and expression of professional speeches, delivered in public, business and special occasion contexts. Attention is given to audience analysis, research and evaluation of argument/ evidence as content, creation and use of professional visual aids, expression of appropriate verbal and nonverbal speech styles, and extemporaneous delivery skills.

305. Professional Communication. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. An examination of both the theory and practice of communication in the professional setting. Content includes communication theory, as well as the roles of: professional, small group, organizational, and mass media communication as related to the workplace. A student receiving credit for COMM 200S cannot receive credit for COMM 305.

307. Understanding European Film. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An introduction to film with an historic overview of films from a variety of European countries. Students will gain the vocabulary necessary to analyze individual films and for the comparative analysis of films from different cultural and historical contexts. The course will focus on issues such as national and individual identity, film as aesthetic form, gender and sexuality, and popular culture. (cross-listed with FLET 307)

311. Communication and the Classroom. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S, or permission of the instructor. An overview of communication education topics and the current research in the classroom. Topics include children’s communication development, teacher-pupil relationships, administration, and communicative activities for the elementary and secondary classroom.

312. Small Group Communication. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S, or permission of the instructor. An introduction to the theories, processes and effects of communication in nonverbal codes. Topics include: kinesthetic, paralinguistic, paralanguage, and critical analysis and contemporary research emphasized.

314. Nonverbal Communication. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S, or permission of the instructor. An introduction to the theories, processes and effects of communication in nonverbal codes. Topics include: kinesthetic, paralinguistic, paralanguage, and critical analysis and contemporary research emphasized.

315W. Communication Between the Sexes. Lecture 3 hours; 3 credits. Prerequisites: junior standing and COMM 200S, or permission of the instructor. An overview of communication theory and research examining verbal and nonverbal communication between men and women. Topics include communication differences as a function of gender, theories which seek to explain these differences, and prescriptions for change: “the hope of androgyny.”

331. Argumentation and Debate. Lecture 3 hours; 3 credits. Prerequisite: COMM 101R or permission of the instructor. An overview of the rhetorical and social scientific theories and research about persuasion and applications in speeches and campaigns.

335. Persuasion. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. An overview of the rhetorical and social scientific theories and research about persuasion and applications in speeches and campaigns.

335W. Rhetorical Criticism. Lecture 3 hours; 3 credits. Prerequisite: COMM 101R or permission of the instructor. With the goal of being able to critique a communication event, students will study a variety of rhetorical approaches that may include neo-Aristotelian, generic, feminist, movement, and postmodern theories, and pedagogical approaches to rhetorical criticism.

337. Model League of Arab States. Lecture 3 hours; 3 credits. Prerequisites: COMM 200S or permission of the instructor. A structured research experience, including evaluation of newscasts and news reports for radio, television, and cable. Electronic news on the local, national, and international levels is analyzed as an institution and as a social force.

338. Cooperative Education. 1-3 credits (may be repeated for credit). Prerequisite: approval of the department and Career Management, in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credits earned is dependent on the nature of the work experience, criteria, and evaluative procedures as formalized and determined by the department and Career Management prior to the semester in which the experience takes place. (qualifies as a CAP experience)

339. Research Practicum. 3 credits. Prerequisites: completion of core courses and 6 hours of upper-level major courses, and approval of supervising faculty. Credit is not available for graduate students. Supervisors and cooperating faculty member are required. A structured work experience with or without remuneration in a communication-related field. The student must select a research project under the supervision of a member of the faculty. A written report is required. (qualifies as a CAP experience)

340. Internship. 3 credits. Prerequisites: approval of department and Career Management. Credit is not available for graduate students. Supervisors and cooperating faculty member are required. (qualifies as a CAP experience)

345W/545. Communication Analysis and Criticism. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: COMM 200S or permission of the instructor. A structured research project, in which the student will develop projects leading to the completion of a short documentary film or video. (cross-listed with THEA 380)

347. Media and Popular Culture. Lecture 3 hours; 3 credits. Prerequisite: COMM 360. This course examines the basic ways in which the mass media intersect with the cultural content of society. Both historical and critical approaches to the study of mass communication and popular culture trace the full implications of their mutual determination. Topics include the development of mass communication and popular culture, the historical and social determinants of the mass media, the function and influence of the mass media, the interrelationship between the mass media and popular culture, and the role of the mass media in society.

348. International Communication in Organizations. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S or permission of the instructor. Focuses on communication theory, research, and applications of a variety of forms of communication in organizational relationships. Topics include superior-subordinate communication, interviewing, and presentations with an emphasis on a diversity of perspectives and types of organizations.

355. Organizational Communication. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. Focuses on critical analysis of theory and research organizations as functional communication systems at the individual, dyadic, small group, and organizational levels. Topics include information processing, problem solving, rationality, management, communication, compliance gaining, and network analysis.

360. Understanding Mass Communication. Lecture 3 hours; 3 credits. Prerequisites: an overview of communication theory and research. Focuses on mass communication systems, industry, advertising, and media effects. Some of the topics include myth as a representation of reality, power, and religion, families and the structure of the people of the New York City. Films, folklores, and literature from Southeast Asia will be studied.

412W/512. Interpersonal Communication. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S. Course examines theory and research about communication in personal and social relationships. Emphasis on the role of communication in the development and maintenance of relationships. (Contemporary topics included)

421S/521. Communication and Conflict Management. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S or permission of the instructor. Focus on theory and research of communication processes in conflicts episodes across social and personal relational contexts. Applied approaches to conflict management emphasized.

425S/525. Communication in Family Systems. Lecture 3 hours; 3 credits. Prerequisite: junior standing and COMM 200S or permission of the instructor. Focus on theory and research exploring communication between and among family members. Emphasis on the family as a communication system. Marital, parental, and sibling subsystems will be examined. Contemporary communication research topics featured.

427S/527. Children and Communication. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. An examination of theories and research about communication development, communication in children’s relationships with family, peers, and adults concerning communication and children, including media.

434/534, African-American Rhetoric—Voices of Literature. Lecture 2 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. Available for pass/fail grading only. Student participation for credits earned is dependent on the nature of the work experience, criteria, and evaluative procedures as formalized and determined by the department and Career Management prior to the semester in which the experience takes place. (qualifies as a CAP experience)

444/544. New German Cinema. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. A structured research project, in which the student will develop projects leading to the completion of a short documentary film or video. (cross-listed with THEA 380)

445/545. Communication Analysis and Criticism. Lecture 3 hours; 3 credits. Prerequisite: COMM 200S or permission of the instructor. An overview of the rhetorical and social scientific theories and research about persuasion and applications in speeches and campaigns. Students will learn statistical data collection and data analysis techniques.
mediated communication for the purpose of becoming more discerning consumers of public and mass mediated messages. Students will also be exposed to current mass communications programs, advertisements, newspapers, public discourses, speeches, and conversations.

447W/547. Electronic Media Law and Policy. Lecture 3 hours; 3 credits. Prerequisite: COMM 360 or permission of the instructor. Course will focus on legal and policy issues related to electronic media and technology, with an emphasis on legal considerations of electronic media. Subjects will include First Amendment issues concerning news, programming; statutory and administrative rules and challenges to traditional legal thought brought about by new technologies.

448/548. International Media Systems. Lecture 3 hours; 3 credits. Prerequisite: COMM 360, or permission of the instructor. An examination of the rise of broadcast technology and its effects on society and culture in the Western world. Policy and theory issues of systems of broadcast ownership, access, regulation, programming, transborder, broadcast programming, and dominance and diversity of Western programming will be addressed.

450W/550. Remote Control: Women and Global TV Culture. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. The course introduces students to women's participation in television industries across the world, as audience members, producers of programs, and subjects of television shows. Students will be trained in both feminist and media theories to understand the formation of contemporary national and global TV culture. (cross-listed with WMST 450W/550)

456/556. Organizations and Social Influence. Lecture 3 hours; 3 credits. Prerequisite: COMM 335 or 355 or permission of the instructor. This course focuses on theories, research and applications of the social influence function of communication in organizational settings. The course examines traditional and nontraditional social influence theories and research as applied to organizational change.

465/555. Mass Media and the National Elections. Lecture 3 hours; 3 credits. Prerequisite: COMM 360, junior standing, or permission of the instructor. Focuses on use of media in presidential elections from 1952 to the present. Topics include image creation and management, and the relationship between media and political campaigns, which citizens develop knowledge of, engage with, and practice politics through mass media and personal media forms. Students examine how different forms of civic engagement and political organizing via media such as the alternative press, talk radio, rebel radio, letters-to-the-editor, Internet activism, public access television, and others. Students seek to understand the power available to citizens for political engagement via mediated communication forms.

468/568. Communication and Political Symbolism. Lecture 3 hours; 3 credits. Prerequisite: COMM 360 or permission of the instructor. Communication and display of symbols and rituals of political meaning are central to how political power is built and legitimized. This course will focus on the social, political, and cultural significance of public rituals such as elections, the State of the Union address, and war; political symbols such as the American and Confederate flags, and how flags are used; and how institutions and institutions practiced related to public memory, such as war memorials, historical reenactments, museums and theme parks, and corporate culture.

469. Communication Education Practicum. 3 credits. Prerequisites: completion of core courses and 6 hours of upper-level major courses, and approval of supervising faculty and department chair, prior to registration. An examination of communication education theory and methodology through practical experiences and readings. Students taking this course serve as teaching assistants for COMM 200S, which serves as a lab for practicing skills as appropriate.

470W/570. Film as Communication. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course examines the history and theory of the development of communication and an institution. An examination of how films are made, how they communicate as a visual and aural medium, and how they reflect and shape social experiences and readings. Students taking this course serve as teaching assistants for COMM 200S, which serves as a lab for practicing skills as appropriate.

471W/571. Video Documentary I. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course introduces students to the ways in which different media forms are used in the storytelling of human experiences. Emphasis is on electronic media, though other approaches, such as direct marketing techniques and the increasing use of new media technologies for marketing, will also be examined.

479/579. American Film History. Lecture 2 hours, laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An examination of American motion pictures as an art form, a business and an institution from its inception to the present. Particular attention is accorded to the narrative fiction film, its aesthetic and technological development, economic organization and social impact. Examination of many connections between film history and American culture. (cross-listed with THEA 479/579)

480/580. Video Documentary II. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: COMM 380. This is a production/studio course designed to complete the preparatory work developed in Theatre 380: The Video Documentary I, with the completion of a short documentary film. Students in this course, meeting on a regular, arranged basis, will report their progress on field research and production. Discussion/presentation topics range from production field work to post-production editing. The course is structured such that the student will be directed to complete the rough footage in post production. (cross-listed with THEA 480/580)

476/576. The Documentary Tradition. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: COMM 360 or permission of instructor. An in-depth investigation of the documentary form, including its role in news, education, and entertainment. Examination of the relationship between theory and practice in the field of documentary film, television, and radio. Examining both American and international examples, the course will look at major social movements, cultural critiques, and the role of the documentary in production. Representative texts will be studied for their socio-political influences, persuasive techniques, and aesthetic formulas.

495/595, 496/596. Topics in Communication. 3 credits each semester. Prerequisite: appropriate survey course or permission of instructor. Advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to the generalized nature of the communication curriculum, may not be offered regularly.

497/597, 498/598. Tutorial Work in Special Topics in Communication. 3 credits each semester. Prerequisite: senior standing or permission of the instructor. This course will be directed by an instructor as appropriate. A topic will be selected under the direction of the instructor. Conferences and papers as appropriate.

600. Intercultural Communication: History, Theory and Application. Lecture 3 hours; 3 credits. Students will be introduced to the field of intercultural communication based on a particular topic chosen by the instructor. The course will cover the development of the field of intercultural communication, focus on the research efforts of influential scholars in the field, and explore the research questions and theoretical frameworks that have guided research in the field. Students will write a research paper on a topic selected by the instructor, and may present their findings at a conference, or submit the paper for publication. This course is designed for students who have completed relevant coursework in communication studies.

615. Construction of the Gendered Body. Lecture 3 hours; 3 credits. This course will examine: (1) the nature-nurture controversy as reflected in current theories about gender; (2) the ways in which the body is divided into physical bodies and social bodies; (3) the role of biological and cultural factors in shaping gender roles and expectations, and (4) the interrelation of language and power and the status of the sexes.

650. Religious Communication. Lecture 3 hours; 3 credits. This course surveys the relationship between communication and religion with an emphasis on theory, research and applications. Topics may include the communication of religious beliefs, ritual, ceremony, worship, and mediated communications.

672. New Communications Media and Social Change. Lecture 3 hours; 3 credits. This course explores the interaction between media technology and social development in nations and sub-national groups. Special emphasis will be placed on the role of “networks” in both societies and technologies.

673. Television Histories as Collective Memory. Lecture 3 hours; 3 credits. This course examines the history of television as a medium of collective memory, and the way in which it represents the nation and its people, and how it is used as a cultural and national identity tool. The course examines the history of television as a medium of collective memory, and the way in which it represents the nation and its people, and how it is used as a cultural and national identity tool.

697/698/699. Tutorial in Special Topics in Communication. Prerequisite: approval of department chair. Independent study or a study of a topic under the direction of an instructor. Conferences and papers as appropriate.

795/895. Selected Topics in Communication Studies. Lecture 1-3 hours; 1-3 credits. Prerequisite: permission of instructor. The course examines advanced study of selected topics in communication studies will be covered in such a way as to permit small groups of qualified students to study subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

797/897. Independent Research in Communication Studies. 1-12 credits. Prerequisite: permission of instructor. Independent research directed by professors/ faculty members examining communication topics.

Community College Leadership—CCL

720/820. Community College Leadership. Lecture 3 hours; 3 credits. Prerequisite: acceptance into the doctoral program or permission of the instructor. A doctoral level seminar intended to provide theoretical and practical background on issues related to community college leadership. The advanced study of leadership and management, the roles of community colleges in society, and the skills needed to fulfill the responsibilities of a senior community college administrative leadership position. Of particular interest are the skills needed by a community college dean, vice presidents and presidents.

724/824. Community College Finance. Lecture 3 hours; 3 credits. Prerequisite: acceptance into the doctoral program or permission of the instructor. A doctoral level seminar intended to provide information about the financing and budgeting processes that are practiced in community colleges. This will be accomplished by examining the budget development and budget planning process and a survey of sources and uses of funds as well as the functions and techniques of responsible management of resources.

725/826. Community College Curriculum and Program Development. This course is offered into the doctoral program or permission of the instructor. A doctoral level seminar intended to assist students to understand the development and management of the community college curriculum. This will be done by (1) examining processes practiced in the identification of courses and degree programs, (2) the review and approval processes of individual programs and courses, (3) assessment and other accountability activities, and (4) the authorizing processes and procedures for establishing or terminating courses or programs.

760. Internship in Community College Leadership. 3 credits. Prerequisite: acceptance into the doctoral program or permission of the instructor. The purpose of this course is to allow students to extend their experience in a leadership role at a community college setting. The student will learn about leadership skills at the community college. The student may be directed by being given leadership tasks associated with the site he or she has chosen.
Community Health Professions — CHP

Associate Professors Clare Houseman (Chair of the School of Community and Environmental Health, Graduate Program Director for Community Health), C. E. Box, A. J. English (Director of Environmental Health Programs)

1. Introduction

1.1. The Importance of Community Health

Community health is the integrated study of the community, the health of its members, and the roles that individuals, groups, and organizations play in the delivery of health services. It involves the examination of the social, economic, and environmental factors that influence health and the development of strategies to improve health and well-being. Community health educators and practitioners work to improve health outcomes by addressing the needs of communities and populations.

1.2. Goals of the Community Health Professions

The goals of the Community Health Professions are to provide a conceptual and experiential approach to understanding systems thinking and systems dynamics, as well as to analyze health policies and their impact on health and health-care delivery. This program is designed for graduate students in the health professions and includes courses on public and community health, managed care, and health policy.

1.3. Program Structure

The Community Health Professions program is structured to provide students with a broad understanding of the health-care delivery system and the role of communities in improving health outcomes. The program includes courses on public health, health policy, managed care, and health systems management. Students will gain practical experience through field placements and capstone projects.

2. Course Descriptions

2.1. 420/520. Health Promotion and Health Education

This course provides an overview of the principles and methodologies of health promotion and health education. It covers the development of health promotion programs, the evaluation of health promotion outcomes, and the role of health educators in the design and implementation of health promotion interventions.

2.2. 425/525. Health Aspects of Aging

This course examines the health challenges and opportunities associated with aging. Topics include the biological, psychological, and social aspects of aging, as well as the role of health-care providers in meeting the needs of older adults.

2.3. 430/530. Community Health Resources

This course provides an overview of community health resources, including health-care facilities, community-based programs, and public health agencies. Students will learn about the roles and responsibilities of various community health organizations.

2.4. 450/550. Public and Community Health Administration

This lecture course focuses on the administration of public and community health agencies. Topics include leadership, management, and the delivery of health-care services.

2.5. 455/555. Interpersonal and Counseling Skills for Health Professionals

This course provides skills in interpersonal communication, counseling, and the development of therapeutic relationships. It covers the application of these skills in health-care settings.

2.6. 470/570. Health, Dying, and Survivorship

This course explores the concept of dying and the experience of survivors. It examines the cultural, social, and psychological aspects of dying and bereavement and the role of health-care providers in providing support.

2.7. 480/580. Legal/Ethical Issues in Health Care

This course focuses on the legal and ethical issues that arise in health-care delivery. It examines the role of laws and regulations in protecting the rights of patients and health-care providers.

2.8. 490/590, 495/595, 496/596. Topics in Community Health

These courses provide an opportunity for advanced investigations of selected topics in community health, developed by individual faculty members.

2.9. 497/597. Readings in Community Health

This course provides an opportunity for the study of selected topics in community health under the supervision of a faculty member.

2.10. 705/805. Health Care in NonWestern Countries

This course focuses on the health-care systems and challenges faced by nonWestern countries, with a particular emphasis on developing countries.

2.11. 715. Decision Analysis in Health Care

This course introduces students to decision analysis techniques for making health-care decisions. It covers the use of decision trees and utility analysis in health-care planning.

2.12. 724. Performance Improvement in Health Care

This course focuses on techniques for improving the delivery and access to health care. It covers the use of quality improvement methods and the evaluation of health-care performance.

2.13. 725/525. Health Care in Developing Countries

This course examines the health challenges and opportunities associated with the development of health-care systems in low-income countries. It covers the role of international agencies in supporting health-care development.

2.14. 750. Educational Processes for the Health Professional

This course focuses on the learning processes of health-care professionals, including the design of educational programs and the evaluation of educational outcomes.

2.15. 762. Research Design and Evaluation in the Health Professions

This course provides an introduction to research methods in the health professions. It covers the design and evaluation of research studies in health care.

2.16. 772. Policy and Politics of Health

This course explores the role of policy and politics in health-care delivery. It examines the development of health-care policy and the impact of policy on health-care delivery.

2.17. 775. Issues in Health Care Administration

This course focuses on the administration of public and community health agencies. It covers the management of health-care services and the development of policies and programs.

2.18. 795. Community Health Professions

This course provides an overview of the health-care delivery system and the role of communities in improving health outcomes. It covers the development of public and community health programs and the implementation of health-care policy.

3. Conclusion

The Community Health Professions program is designed to provide students with a comprehensive understanding of the health-care delivery system and the role of communities in improving health outcomes. It covers the development of health promotion programs, the evaluation of health promotion outcomes, and the role of health educators in the design and implementation of health promotion interventions.
course will introduce the student to the issues and problems concerned with the development of grants and contracts as they relate to business. Students will be given the opportunity to explore the multiple sources of grants and contracts as well as the difficulties in obtaining grants and contracts. The course will focus on the multiple roles of the funding agencies and the importance of matching the interests of the grant seeker with the grant maker.

775. Comprehensive Health Planning. Lecture 3 hours; 3 credits. This course emphasizes the principles and processes of public health planning, including a formulation of objectives, priorities, policy choices, assessment of resources, implementation, and evaluation. The student will be introduced to the health planning process and will learn to work with outside agencies to ensure that the student is informed concerning the legal requirements affecting the health-care industry and is designed for all health professionals interested in the legal system's relationship to health-care delivery. Additionally, this course will provide a survey of the basic concepts and content in the many health care laws and related topics. The course will include an explanation of sources of legal authority, and a familiarity with legal language.

Computer Science


101D. Computers: An Introduction. Lecture 3 hours; 3 credits. Laboratory work required. An introductory course to assist students with or without computing experience. Students will gain instruction and hands-on experience with the basic operating system, word processors, spread sheets, internet, word processing, electronic spreadsheets, graphic presentation, and other software packages available in the university during their initial work experience. Students will gain instruction and hands-on experience with the basic operating system, word processors, spreadsheets, and other software packages available in the university during their initial work experience.

102. Introduction to Networks and the Internet. Lecture 3 hours; recitation 1 hour; 3 credits. Laboratory work required. An introductory course for students with or without computer experience that have access to the Internet with its vast information. Emphasis on a computer network's architecture, the University's network, e-mail, Internet, World Wide Web, WWW browsers, and gaining access to information that resides on computer systems throughout the world. Knowledge of how to effectively use the Internet and the understanding of how and why it works are critical elements.

110. Introduction to Computer Science. Lecture 1 hour; 1 credit. Introduction to the Computer Science Department, College of Sciences, Old Dominion University, and to the profession of computer science. This course will provide an introduction to the scientific research efforts of computer science and the applications using those research efforts. Required for incoming computer science majors.

147. 148. Introductory Computer Programming I, II. Lecture 2.5 hours; laboratory 1.5 hours; 3 credits. Corequisites: CS 150 with consent of the instructor. The computer programming sequence covers the same material as CS 150 with additional emphasis in problem solving and computer program development.

149D. Elements of Computer Science. Lecture 3 hours; 3 credits. Prerequisite: MATH 102M or equivalent course. Laboratory work required. No previous computing experience is assumed. Topics include basic computer organization, data representation, programming environments, and programming languages and variables, assignment, functions, and control flow. Applications in the sciences are emphasized.

150. Introduction to Programming. Lecture 3 hours; laboratory 1 hour; recitation 1 hour; 4 credits. Prerequisite: MATH 102M. Laboratory work required. Introduction to computer programming and problem solving in C++. Topics include program-solving methodologies, program design, algorithm development, and testing. C++ language concepts include variables, data types and expressions, assignment, control-flow statements, arrays, sorting, functions, and printer parables and linked lists.

170. Computer Organization and Architecture. Lecture 3 hours; 3 credits. Prerequisite: MATH 102M. Fundamentals of the architecture and operation of modern computers. Topics include logic gates; combinational logic; Basic computer arithmetic; binary numbers; floating point representation. System hierarchy, overview of a computer; integrated circuit technology.

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Performance: metrics; choosing benchmarks; Amdahl's law, Instruction Sets and Operations: assembly language; machine code, low-level abstraction tools. 250. Problem Solving and Programming. Lecture 3 hours; laboratory 1.5 hours; recitation 1 hour; 4 credits. Practitioner's perspective. This is a case study course on software project work. Software design issues arising in large problems and C++ constructs aiding in their solution. Topics include decomposition, design documentation, abstract data types and classes, common data structures, dynamic data structures, linked lists, trees, and testing and debugging techniques. The standard library and templates are introduced. Large project required. Emphasis on software design and implementation. C++ language laboratory 1.5 hours; recitation 1 hour; 4 credits. Prerequisite: CS 147, 149D, or 150. An introduction to Unix with an emphasis on the skills necessary to work cooperatively and in a team in the Unix environment. Topics include command line shells, files and directories, editing, compiling and common command line utilities.


295. Topics in Computer Science 1-3 credits. Special topics course. Offered in odd years only. Topics to be announced. Emphasis on a computer network's architecture, the World Wide Web, WWW browsers, and gaining access to information that resides on computer systems throughout the world. Knowledge of how to effectively use the Internet and the understanding of how and why it works are critical elements.

310W. Computer Ethics, and Society. Lecture 3 hours; 3 credits. Prerequisites: ENGL 110C, CS 150 and 151. Students will consider ethical and societal impact of computer science in today's world. Emphasis on CS 250 and 251, and education. In addition, privacy and computer fraud issues will also be discussed.

312. Internet Concepts. Lecture 3 hours; 3 credits. Prerequisite: CS 102 or 252. Laboratory work required. An in-depth introduction to the Internet and the World Wide Web for CS majors as a basis for more advanced studies in Web programming, Internet tools, and Web document publishing. Internet design and communication protocols including: TCP/IP, FTP, HTTP, SMTP, telnet and the tools that use them. Internet search tools and their design will be addressed. Internet issues such as netiquette, copyright, spam, computer viruses, cookies, and security will be addressed.


331. Object-Oriented Programming and Problem Solving. Lecture 3 hours; laboratory 1 hour; 3 credits. Prerequisite: CS 102 or 252. Laboratory work required. An in-depth introduction to the Internet and the World Wide Web for CS majors as a basis for more advanced studies in Web programming, Internet tools, and Web document publishing. Internet design and communication protocols including: TCP/IP, FTP, HTTP, SMTP, telnet and the tools that use them. Internet search tools and their design will be addressed. Internet issues such as netiquette, copyright, spam, computer viruses, cookies, and security will be addressed.

332. Data Structures and Algorithms. Lecture 3 hours; 3 credits. Prerequisites: CS 250 and either CS 250 or 333. The techniques and idioms of object-oriented programming in C++. Topics include C++ syntax and semantics, principles of object-oriented design and basic software engineering skills. The course requires a large term project to demonstrate the demonstration of material. This is a web-based course and requires considerable maturity and independent responsibility on the part of the student.

410. Project Management II. Lecture 4 hours; 4 credits. Prerequisites: CS 150 (or the equivalent course in high level language) and MATH 163. This course covers problem solving and object-oriented programming in C++. Topics include C++ syntax and semantics, principles of object-oriented design and basic software engineering skills. The course requires a large term project to demonstrate the demonstration of material. This is a web-based course and requires considerable maturity and independent responsibility on the part of the student.

417/517. Computational Methods and Software. Lecture 3 hours; 3 credits. Prerequisites: CS 250, MATH 252, and either CS 333 or MATH 353. Computer projects addressing societal problems. The course provides opportunities for students with challenges of business environment in developing a technology based project. Students identify a societal problem, identify solutions, define project solutions, develop project objectives, conduct feasibility analysis, establish organizational group structure to meet project objectives, develop formal specifications of the project. Students write an informal technical project presentation and develop WWW documentation. Students prepare a grant proposal. Students may develop a product prototype for the market. Students develop a functional product prototype. (qualifies as a CAP experience)

410/510. Professional Workforce Development I. Lecture 3 hours; recitation 1 hour; 3 credits. Laboratory work required. Project management and development. Provides an overview of the ORACLE database architecture, and an introduction to programming in SQL and PL/SQL. Basics of the ORACLE database architecture. Querying data in ORACLE. Creating the ORACLE database and other database objects. PL/SQL basic programming constructs.

395W. Programming Languages 1-3 credits. This course provides instruction in a selected programming language. Prior knowledge of programming is assumed (e.g. CS 102 or 252). Topics include data types, control structures, syntax, and applications. An informed laboratory with programming assignments. May be repeated for credit with different languages, unsolvable problems, and NP-completeness.

394. Introduction to ORACLE and PL/SQL Programming. Lecture 1.5 hours; 1.5 credits. An overview of the ORACLE database architecture, and an introduction to programming in SQL and PL/SQL. Basics of the ORACLE database architecture. Querying data in ORACLE. Creating the ORACLE database and other database objects. PL/SQL basic programming constructs.

393W. Programming Languages 1-3 credits. This course provides instruction in a selected programming language. Prior knowledge of programming is assumed (e.g. CS 102 or 252). Topics include data types, control structures, syntax, and applications. An informed laboratory with programming assignments. May be repeated for credit with different languages, unsolvable problems, and NP-completeness.

410/510. Professional Workforce Development I. Lecture 3 hours; recitation 1 hour; 3 credits. Laboratory work required. Project management and development. Provides an overview of the ORACLE database architecture, and an introduction to programming in SQL and PL/SQL. Basics of the ORACLE database architecture. Querying data in ORACLE. Creating the ORACLE database and other database objects. PL/SQL basic programming constructs.
Newton, domain decomposition, and Krylov methods.

418/516. Web Programming. Lecture 3 hours; 3 credits. Prerequisites: CS 270 or 361. Laboratory work required. Introduction to laboratory oriented web programming. Overview of Internet and world wide web; Web server and security; HTTP protocol; Web page design using JavaScript, dynamic HTML, HTML images, and database integration. Java programming for the web.

419/519. Internet Databases. Lecture 3 hours; 3 credits. Prerequisites: CS 312 and 450. Database applications of the Internet and distributed database systems; suitable for implementing database applications over the Web. Databases considered include student and employee information, online catalog, home pages, and electronic commerce. SQL scripting is used with Microsoft Access, Oracle, and RDBMS. Java is used for Java database tools on the Internet such as Oracle Developer Forms.


451/551. Software Engineering Survey. Lecture 3 hours; 3 credits. Prerequisites: CS 300 or 361. Laboratory work required. Evaluation of software development methodologies. Topics include: software life cycle models, software specification and design methodologies, informal specification techniques, formal specifications, design tools, software analysis, quality assurance, life cycle management, software costing models and complexity.

452/552. Database Software Development Methodology. Lecture 3 hours; 3 credits. Prerequisites: CS 270 or 450/550, Oracle DB. Investigates advanced methodologies for the design and development of software in database environments. This includes architecture and conceptual design of database architectures and/or object-oriented paradigms. Applying elements of these methodologies to modern database application development to include: data warehousing, and data mining. Projects include constructing multi-tier application software applying these methodologies using a state-of-the-art database platform.

454/554. Network Management. Lecture 3 hours; 3 credits. Prerequisite: CS 270. Laboratory work required. The administrative tasks and networkers and their interaction with wide area networks; network topologies for local and wide area networks, common protocols and services, management of services and network administration; TCP/IP and configuration, security, monitoring and trouble-shooting.

455/555. Introduction to Networks and Communications. Lecture 3 hours; 3 credits. Prerequisite: CS 270, STAT 330, OSI and TCP/IP reference models and protocols. Hardware survey, datalink, network, and transport layers. Broadcast and point-to-point networking techniques, routing, switching, and LAN media access. Internetworking, frame relay and ATM.

456/556. Database Administration I. Lecture 3 hours; 3 credits. Prerequisite: CS 381 and either CS 330 or 361. Laboratory work required. Programming in SQL and PL/SQL and use of DBA administration skills in the ORACLE database environment. Creating database objects, querying and manipulating, and PL/SQL programming. Introduction to database administration. This course will include the following topics: Create, organize, and manage database files, users, privileges and other resources.

457/557. Database Administration II. Lecture 3 hours; 3 credits. Prerequisite: CS 456/556. Laboratory work required. Advanced DBA administration skills in the Oracle database environment. UNIX commands and advanced tools for planning and implementing backup and recovery of the database. Performance optimization and tuning of database and applications including memory and disk structures. Configuration and maintenance of clients and servers in a network environment.

458/558. Unix System Administration. Lecture 3 hours; 3 credits. Prerequisite: experience with UNIX. Laboratory work required. Understanding and implementing UNIX. An overview of the UNIX operating system in a networked environment is covered. Topics covered include installation, file system management, backup procedures, process control, user administration, device management, Network File Systems (NFS), Network Information Systems (NIS), UNIX security, Domain Names and Internets and Interprocess Communication. UNIX operating systems. There is a large hands-on component to this course.

460/560. Computer Graphics. Lecture 3 hours; 3 credits. Prerequisites: CS 361 and matrix theory. Laboratory work required. An introduction to graphical systems and methods. Topics include computer graphics hardware, machine characteristics, transformation and modeling, rendering, images and information from images, mathematical methods in computer vision, 2D and 3D reconstruction and visualization, model building using algebraic surfaces, edge detection, shape from shading, motion recognition, color and texture range finders and range images, feature tracking, object representation and object recognition.

465/565. Computer Vision. Lecture 3 hours; 3 credits. Prerequisite: CS 454/554. Laboratory work required. This course covers wide area network design with emphasis on network protocols. This course will cover in depth TCP and its stack, IP including addressing schemes, RIP, OSPF, BGP, EIGRP, ATM, QoS, MPLS, and Frame Relay. There will be a discussion on WAN security design. This course has a large hands-on component.

471/571. Systems. Lecture 3 hours; 3 credits. Prerequisites: CS 270 and 361. Laboratory work required. Operating system structures. Multiprogramming and multiprocessing. Memory management. Storage management. I/O systems, distributed systems. Protection and security. The concepts will be illustrated through example systems such as Unix and Windows.

472. Network and Systems Security. Lecture 3 hours; 3 credits. Prerequisite: CS 361. This course deals with the basic protocols, techniques and programming issues to secure network and computer systems. Topics include: Basic cryptographic algorithms and concepts (Secret Key Cryptography, Hashes and Message Digests, Public Key and Authentication); Security Standards (Kerberos, Public Key Infrastructure, IPsec, S/TLTS); Security applications (PEM, S/MIME, PGP, HTTP, Firewall); Hands-on programming using OpenSSL.

475/575. Introduction to Computer Simulation. Lecture 3 hours; 3 credits. Prerequisites: STAT 330 and either CS 330 or 361. Efficient implementation methods. Time integration, handling of random variables, statistics. Statistical experiments. Statistical analysis in simulation. Generation of random numbers and stochastic variables. Programming with simulation languages, DCG, GPSS, SIMSCRIPT, JSIM, SIMAN. Verification and validation of simulation models. Distributed simulation. Special topics such as HLA will be discussed.

476/576. Systems Programming. Lecture 3 hours; 3 credits. Prerequisite: CS 471. Laboratory work required. This course is to help students fully understand and utilize the internal working of computer systems and develop their own computer programming, networking and programming environments. Topics include: Shell Script Programming, X Windows (Xlib and Xlib extension); UNIX System Calls, UNIX Internals, IP packets, IP Addresses and Signals. Network Programming (UDP/TCP Sockets and Multicasting) and Java Systems Programming (SWING, Multithreading, etc.).

477/577. System Programming in Windows Operating Systems. Lecture 3 hours; 3 credits. Prerequisites: CS 330 and 471. Gain a basic understanding of systems programming for the Microsoft Windows® system programming platforms. This course covers the software architecture of current Windows® programming environments. Topics include desktop and network application programming. A term project is required.

483. Analysis of Algorithms. Lecture 3 hours; 3 credits. Prerequisite: CS 361. MATH 316 or equivalent courses. Time and space complexity of algorithms, algorithms on graphs, string matching, fast Fourier transforms, evaluating polynomial functions, matrix multiplication, parallel algorithms, NP-complete problems and approximation algorithms.


487. Applied Parallel Computing. Lecture 3 hours; 3 credits. Prerequisites: CS 270 and either CS 361 or 365. An introduction to parallel processing, tools, and fundamental concepts of parallel computing: Machine models, architectures, parallel topologies and languages, parallel programming design and parallel programming architecture independent message passing interface (MPI) communication libraries, and serial/crash-parallel computer projects.

488/588. Principles of Compiler Construction. Lecture 3 hours; 3 credits. Prerequisite: CS 361. Laboratory work required. Course will include theoretical and practical aspects of compiler design and implementation. Topics will include: lexical analysis, syntax, and semantic analysis, code generation, optimization, and error handling. Students will design and implement a working compiler for a simple language.
the experimental distributed systems that have been built in the last few years. Special attention will be paid to the factors that are important to note in building such systems. The project component of this course will enable students to get hands-on experience of implementing some of the distributed systems. 

770/878. Networked Multimedia Systems. Lecture 3 hours; 3 credits. Prerequisites: CS 555 and 576. This course is an introduction to the technical foundations for capturing, transmitting, presentation and storage of continuous multimedia. Students will explore the applications of multimedia technology to such problems as such group collaboration and network based education. Topics covered include: Architectures and issues for distributed Multimedia Systems; Multimedia System Design and Support; quality-of-service, synchronization, and presentation of multiple multimedia streams. (offered spring) 

779/879. Design and Network Protocols. Lecture 3 hours; 3 credits. Prerequisites: CS 555 and 576. Understanding the design, implementation and performance of network protocols using TCP/IP protocol suite as a case study. The students will have hands-on experience on low-level tools and will access and study the source code of these protocols and writing networking software applications. Topics include: socket interface, IPv4 and IPv6, routing, UDP, multicasting and IGMP, TCP specification, implementation and performance. (offered spring) 

780/886. Expert Systems. Lecture 3 hours; 3 credits. Prerequisite: CS 480/580. Expert system approach, knowledge acquisition techniques and representation schemes, inference strategies and explanations, reasoning under uncertainty, inexact reasoning and fuzzy logic, expert system shells, expert systems used in system life cycle, expert systems applications; examples, expert system implementation tools, managerial and organizational considerations, applications of expert systems. (Offered fall)

785/895, 796/896. Topics in Computer Science. 1-3 credits. Prerequisite: permission of the instructor. 

601. Principles of Counseling. Lecture 3 hours; 3 credits. An overview of counseling and guidance services, including basic philosophy, principles and methods used in educational settings.

630. Growth Group. Laboratory 2 hours; 1 credit. Corequisites: COUN 601 and 633. Students will participate as a member of a small group of 12. The goals of the group experience are to promote self-understanding, self-analytical skills, and interpersonal relationship skills.

644. Group Counseling. Lecture 3 hours; 3 credits. A study of the phase and stage theories of lifespan development with application to counseling. Current research findings on major developmental issues (e.g., gender) will be emphasized.

633. Counseling Skills. Lecture 3 hours; 3 credits. Corequisite: COUN 601. A course focused on developing knowledge, attitudes and skills essential to effective counseling. Emphasis on experiential learning of interviewing skills.

635. Research Methods and Program Evaluation in Counseling. Lecture 3 hours; 3 credits. Introduction to qualitative and quantitative research and program evaluation.

644. Group Counseling. Lecture 3 hours; 3 credits. Corequisites: COUN 601, 630, 633, 645, 650. A study of the development of group leadership skills, and research as well as the development of group leadership skills.

645. Testing and Individual Appraisal in Counseling. Lecture 3 hours; 3 credits. Corequisites: COUN 601, 633. Focus is on major concepts and principles of psychological testing and measurement as they apply to the use of standardized instruments with differing populations.


650. Counseling Theory and Practice. Lecture 3 hours; 3 credits. Corequisites: COUN 601, 630. A study of major counseling theories and the development of counseling skills through providing students with a theoretical foundation upon which to develop their counseling approach.

651. Issues in Counseling. Lecture 3 hours; 3 credits. Prerequisites: COUN 601, 630, 633, 645 and 650. Designed to engage helping professionals in a current and critical analysis of issues that affect disparities in society through counseling work. Emphasis on the social identities of gender, race, ethnicity, religion, alcohol and drug use.

699. Practicum in Counseling. 3 credits. Prerequisites: COUN 601, 603, 633, 644, 645, 650 (see Program Handbook for cadastral, international, regional or specialty area). This supervised experience will enable students to practice basic and intermediate individual and group counseling skills with clients. Emphasis will be on developing knowledge and skills learned in previous course work.

676. Professional Issues in School Counseling K-12. Lecture 3 hours; 3 credits. Prerequisites: COUN 640, 644, 650 and 676. This course will provide an overview of theories and techniques associated with secondary counseling settings. Emphasis will be placed upon the counselor's role as a facilitator of normal developmental processes to promote student success.

679. School Counseling Program Development K-12. Lecture 3 hours; 3 credits. Prerequisites: COUN 631, 644, 650 and 679. This course introduces some of the commonly used techniques in the field of counseling and school counseling programs. (offered spring).

680. Community Agency Counseling. Lecture 3 hours; 3 credits. Prerequisites: COUN 601, 630, 633, 645, and 650. This course will examine the broad range of roles and functions of the community agency counselor within the agency setting.

691. Family Systems and Family Development. Lecture 3 hours; 3 credits. Prerequisites: COUN 640, 644, 650 and 691. The course offers a study of the family as a system, family life cycle stages, tasks, and difficulties that families may experience as they move through their developmental stages. Concepts and principles applicable to helping people within a systems perspective will also be addressed.

695. Topics in Counseling. Lecture 1-6 hours; 1-6 credits. The study of selected topics in counseling.

697. Career Development and Nation Development. Lecture and discussion 3 hours; 3 credits. A course is an exploration of ways adults construct meaning, including intellectual, emotional, relational, and spiritual dimensions. Nation and culture are highlighted as they affect knowing. The course has applications to counseling, college student affairs, organizational development, and advocacy. The course is intended to develop a working knowledge of the major developmental theories and conceptual approaches associated with college student personnel work and college student counseling.

710/810. College Student Personnel Work. Lecture and discussion 3 hours; 3 credits. This course is intended to be an introduction to the practice of student personnel/ student development/staff affairs work in American higher education. It is appropriate for students who have an interest in student affairs, student organizations, college students, student leadership, and student development. The course is designed to help students develop a theoretical foundations and history of student personnel work in college. It will also provide students a structural framework for studying student development across life stages. Emphasis is placed on students, problems, issues and ideas that are facing the professionals in the new millennium.


773/873. Network Security: Concepts, Protocols and Programming. Lecture 3 hours; 3 credits. Prerequisite: CS 455/555. This course deals with the basic protocols, techniques, and code issues to distributed internet applications and traffic. Topics include: Cryptographic algorithms tools and concepts; Secure Socket Layer (SSL); Transport Layer Security (TLS) using SSL; Internet Application: SMTP, SNMP, UDP and multicast; Hands on socket programming using C and Java.

775/875. Distributed Systems. Lecture 3 hours; 3 credits. Prerequisites: CS 471, 550 and 555. This course deals with the design and implementation of distributed computer systems and will discuss the motivation for building distributed systems, various algorithms and protocols proposed in literature, system operations, and some aspects of...
Criminal Justice — CRJS


195S. Intro to Criminal Justice. Lecture 3 hours; 3 credits. An introduction to the field of criminal justice. Topics include an overview of the criminal justice system, an examination of the factors that shape the criminal justice system, and an exploration of the historical and cultural influences on the development of the criminal justice system.

202P. Understanding Violence. Lecture 3 hours; 3 credits. An introduction to the study of violence, including its causes, consequences, and social and cultural context. Topics include theories of violence, the role of social and cultural factors in violence, and the impact of violence on individuals, communities, and society.

203W. Violence in the World of Children. Lecture 3 hours; 3 credits. An exploration of violence in the lives of children, including the experiences of children in conflict, the role of violence in the development of children, and the impact of violence on children's physical and mental health. The course includes an examination of the role of violence in the lives of children in different cultures and societies.

204W. Crime, Society, and the Media. Lecture 3 hours; 3 credits. An examination of the role of the media in the construction and perpetuation of images of crime and criminals. The course includes an analysis of media representations of crime and criminals from a sociological perspective, and an exploration of the impact of media representations on public perceptions of crime and criminals.

205W. Women, Drugs, and Society. Lecture 3 hours; 3 credits. An exploration of the role of women in the drug trade, including the experiences of women as drug users, drug dealers, and drug traffickers. The course includes an examination of the social and cultural context of drug use and the role of women in the drug trade.

212P. Criminal Justice — CRJS

213. Correctional Institutions. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or SOC 215S or permission of the instructor. An examination of the structure, function, and operation of correctional institutions in the United States, including prisons, jails, and rehabilitation centers. The course includes an examination of the role of correctional institutions in the criminal justice system, and the impact of correctional institutions on the lives of inmates.

214. Introduction to Community-Based Corrections. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or permission of the instructor. An introduction to community-based corrections, including probation, parole, and other noninstitutional sentencing alternatives. The course also explores nontraditional alternatives to criminal adjudication such as arbitration and diversion programs.

215S. Introduction to Criminal Justice. Lecture 3 hours; 3 credits. An introduction to criminal justice as a science, including the study of crime, criminals, and society’s response to them.

222. The Criminal Justice System. Lecture 3 hours; 3 credits. A study of social response to criminal behavior as causes more social problems than illegal drug use. The course includes an introduction to the definitions, investigations, processing and punishment of crimes. It is meant to provide the students with an overall understanding of the articulation between law and the criminal justice system.

225S. Honors: Introduction to Criminal Justice. Lecture 3 hours; 3 credits. Open only to students in the Honors College. Special problems section of CRJS 215S.

226. Law and the Criminal Justice System. Lecture 3 hours; 3 credits. The course covers both substantive and procedural law as defined by the courts, the police, the courts, and the public. The course includes an examination of criminal law, the criminal justice system, and the role of criminal law in society.

316. Juvenile Delinquency. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or SOC 215S or permission of the instructor. A study of juvenile delinquency in the contemporary community, its nature, extent, and control, including juvenile court procedure and philosophy. (cross-listed with SOC 333).

317. Correctional Institutions. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or 222 or permission of the instructor. This course is designed to give students a historical understanding of prison and its role in the criminal justice system. The course provides an overview of the development of modern corrections and the role of corrections in the criminal justice system.

319. Public and Private Security. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or permission of the instructor. A study of security systems in public and private agencies and institutions.

320. Law and Social Control. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or permission of the instructor. An examination of the use of punishment as a means to control behavior. Cross-cultural comparisons are given special emphasis.

323. Police in American Society. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or permission of the instructor. Examines the role of police in a free society. Police functions, subculture, community relations and decision making, police ethics, police power, police and social control, police corruption, the violence and the methods by which society attempts to control police behavior are also discussed.

326P. Deviant Behavior. Lecture 3 hours; 3 credits. Prerequisite: CRJS 215S or permission of the instructor. The study of deviance and the role of deviant behavior in society. The course includes an examination of the role of deviant behavior in society and the impact of deviant behavior on society and the individual. (cross-listed with SOC 421/521)

342/523. Public Policy in Criminal Justice. Lecture 3 hours; 3 credits. Prerequisites: CRJS 215S or 222 or permission of the instructor. A study of the nature, development, and utilization of public policy within agencies of the criminal justice system. Topics include policy formulation, constraints on policy makers, influence of constituencies, and the role of research information. Case studies of issues such as crime control, prison overcrowding, police use of deadly force, the death penalty and parole guidelines will be examined.

426W/526. Criminological Theory. Lecture 3 hours; 3 credits. Prerequisites: CRJS 215S and senior standing, or permission of the instructor. A study of the major theoretical problems and theoretical issues in criminology. Deals extensively with issues of crime causation.

427/572. Research Project. Lecture 3 hours; 3 credits. Prerequisites: STAT 130M, SOC 337 and senior standing. Students will work in groups to plan, design, and carry out a research project. Final reports will present the results for the study will be presented in a formal research seminar. The projects will reflect knowledge gained from undergraduate work and training received in STAT 130M and SOC 337.

451/541. Drugs and Society. Lecture 3 hours; 3 credits. Prerequisites: SOC 215S or CRJS 215S. The study of sociological and social psychological explanations of drug use and legal control of drugs. Topics include drug use and abuse, law and policy, and cross-cultural and historical variations in the control of drugs, and social epidemiology of drug use in contemporary society. (cross-listed with SOC 341).

448/548. Women, Sex Discrimination and the Law. Lecture 3 hours; 3 credits. Prerequisites: CRJS 215S or permission of the instructor. This course introduces students to legal issues which specifically affect women and examines historical attitudes which have been used to justify sex discrimination and the legal approaches used to achieve equal protection under the law and examines a variety of specific topics such as: the equal protection analysis, Title VII and Title IX and their relationship to sex discrimination; affirmative action; and reproductive freedom.

450S/550. Blacks, Crime and Justice. Lecture 3 hours; 3 credits. Prerequisites: CRJS 215S and 222 or permission of the instructor. An examination of the role of race and ethnicity in the criminal justice system. The course includes an examination of the social and cultural factors that influence criminal behavior, and the role of race and ethnicity in the criminal justice system.

451/551. Metaphysics of Crime and Justice. Lecture 3 hours; 3 credits. Prerequisites: CRJS 215S and 222 or permission of the instructor. This course deals with the major substantive concepts involved in American criminal law and the relationships among key elements of criminal liability, defenses against criminal responsibility, and descriptions and definitions of specific offenses. Topics include: mens rea, actus reus, the crime of murder, the crime of rape, and the crime of robbery.

452/562. Substantive Criminal Law. Lecture and discussion 3 hours; 3 credits. Prerequisites: CRJS 215S and 222 or permission of the instructor. A study of the criminal justice system and the criminal law. Topics include the substantive elements of criminal behavior and are defined and controlled in various cultures. Cultural differences will be highlighted in order to recognize the diversity of definitions of deviant behavior and of crimes that reflect the cultures in which they exist.
Criminal Justice.
1-3 credits. Prerequisites: senior standing and approval of department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

620. Criminological Theory. Lecture 3 hours; 3 credits. An in-depth study of the major theoretical issues in criminology. Course deals exclusively with causes of crime, the way theory shapes and informs the study of crime and related social issues, and the relationship between theory, research, and practice.

625. The Administration of Criminal Justice. Lecture 3 hours; 3 credits. An analysis of the criminal justice system with an emphasis on the decision-making responsibilities of its officials.

626. Seminar on Special Problems in Criminal Justice. Lecture 3 hours; 3 credits. An opportunity for a small group of graduate students to study in depth one or more of the major issues confronting criminal justice today.

627. Violence Against Women. Lecture 3 hours; 3 credits. This course is a graduate-level introduction to social statistics as they may be applied to, and may vary by semester.

403. Gynecological Screening Laboratory. Laboratory, 3 credits. Prerequisites: advanced standing in the field of cytopathology, diagnostic cytology and pathology of the reproductive tract, and by completing their thesis proposal. (cross-listed with SOC 627)

3.000. Cytotechnology — CYTO
Assistant Professor S.K. Thompson

403. Gynecological Screening Laboratory. Laboratory, 3 credits. Prerequisites: advanced standing and permission of the cytopathology program director. Laboratory experience in the screening of gynecological smears.

404. General Pathology. Lecture, laboratory, 3 credits. Prerequisites: BIOL 250 and 251 or equivalent. Study of the pathology and cytology of the normal female genital tract with emphasis on normal and non-malignant abnormalities. Principles of cytopathologic diagnostic techniques will be discussed.

415. Abnormal Pathology. Lecture/lab, 4 credits. Prerequisite: approval of department chair and 6 hours of CRJS 620. This course is a graduate level course in abnormal pathology. Emphasis will be on diseases of the human body or entering the medical field.

4.000. Normal Gynecological Cytology. Lecture, laboratory, 3 credits. Prerequisite: permission of the program director. Introduction to histological and cytochemical features of the normal female genital tract with emphasis on normal and non-malignant abnormalities. Principles of cytopathologic diagnostic techniques will be discussed.

421. Respiratory Cytology. Lecture, 3 credits. Prerequisites: CYTO 405 and 415. Principles of diagnostic cytology and pathology of the female reproductive tract, including benign conditions, inflammatory and infectious diseases, premalignant conditions and primary and metastatic malignancies.

423. Cytopreparatory Techniques and Procedures. Lecture/laboratory, 3 credits. Prerequisites: completion of the course. Exercises include formulating research questions, hypothesis generation, data collection, and interpretation of results and conclusions. (qualifies as a CAP experience)

442. Cytology Internship I. 3 credits. Prerequisites: CYTO 405 and 415. Supervised, full-time, placement-based experience in a clinical setting; includes evaluation of gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience)

443. Cytology Internship II. 3 credits. Prerequisites: CYTO 405, 415, 424, 444, 445, 446, and 455. Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic specimen slides and study set assignments. Students will pre-screen gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience)

448. Cytology Internship III, 8 credits. Prerequisites: CYTO 405, 415, 444, 445, 446, and 455. Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience)

495. Topics in Cytology. 1-3 credits. Prerequisite: permission of the instructor. Independent study of selected topics in clinical cytology. Review of cytopathologic specimens from various body sites.

497. Cytology Seminar. Seminar, 2 credits. Prerequisites: permission of the instructor. Independent study of current research literature. A seminar presentation consists of cases and seminar presentations into current advances within the specialty of cytopathology. A strawman research proposal and a critical presentation of current journal articles and the research paper are required.

Dance – See Theatre and Dance

Decision Sciences – See Information Systems and Technology/Decision Sciences

Dental Hygiene – DNTH

Professors D. Shuman (Chair of the School of Dental Hygiene), M. Darby (Graduate Program Director), and S.L. Tolle-Watts. Associate Professors D.B. Bauman and G. McCombs. Senior Lecturers I. M. Connolly and E. Thomson. Lecturer A. Bridge. Instructor S.C. Stull.

300. Dental Hygiene Theory I. Lecture 4 hours; 4 credits. Corequisites: DNTH 301 and 302. An introduction to the theoretical foundations of preventive and therapeutic oral health services and oral hygiene practices. Emphasis is on prevention of disease transmission, patient assessment, basic dental hygiene instrumentation, oral health assessment, treatment planning and ethical decision making. (offered fall)

301. Dental Hygiene Services I. Laboratory 8 hours; 3 credits. Corequisites: DNTH 300 and 302. Prerequisites: previous course and permission of the program director. Clinical and laboratory application of introductory skills essential to rendering basic health services to patients with emphasis on basic dental hygiene instrumentation. (offered fall) (qualifies as a CAP experience)

302. Oral Anatomy and Histology. Lecture 3 hours plus laboratory demonstration; 4 credits. Prerequisites: BIOL 250 and 251 or equivalent. A study of the anatomical, histological, embryological and morphological features and development of the head, neck and dentition. Emphasis is on nomenclature, nerve and vascular innervation, muscles of mastication, oral and maxillofacial anatomy and histology of the oral cavity. Additional topics may include bone, joint and nomenclature and anatomy of the dentition plus hands on experience in the dental laboratory.

303. Applied Dental Materials. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: CHEM 101N-102N. An introduction to the properties of restorative materials and techniques commonly used in dental practice and which may be required for use by the dental hygienist. An overview of current trends in dental materials is presented. (offered fall)

327. Dental Hygiene Theory II. Lecture 4 hours, 4 credits. Prerequisites: DNTH 301 and 302. Current comestics and oral hygiene practices. Emphasis is on radiation physics, radiation biology, radiation protection, basic introral radiographic techniques and film processing and mounting procedures. (offered fall)

305. Dental Hygiene Theory II. Lecture 3 hours; 3
306. Dental Hygiene Services II. Clinic 8 hours; 3 credits. Prerequisites: DNTH 300 and 301. Corequisite: DNTH 304. Clinical experience in the on-campus supervised clinic. Completion of clinical evaluation and decision making in performing comprehensive preventive oral health services using the dental hygiene process. Emphasis is on planning and evaluation of the periodontal patient; treatment planning, disease control strategies; and the prevention of disease in patients who are developmentally involved (offered spring). (qualifies as a CAP experience)

307. Pharmacology and Medical Emergencies. Lecture 3 hours; 3 credits. Prerequisites: DNTH 302 and BIOL 250-251. A study of the pharmacologic and therapeutic agents used as adjuncts to dental hygiene and dental care and medical emergency procedures. (offered spring)

308. Oral Pathology. Lecture 3 hours; 3 credits. Prerequisite: DNTH 302. Principles of the disease process and general pathology including cell injury, inflammation, neoplasia and circulatory disturbances are followed by the study of pathology of the teeth, supporting and associated oral structures. Emphasis is on clinical and radiographic appearance of local and systemic disease processes affecting the oral and facial structures. (offered spring)

309. Oral Hygiene Technology. Clinic 1 hour laboratory 2 hours; 2 credits. Prerequisite: DNTH 304. Continued development of the principles and techniques obtained in Oral Hygiene Technology. Emphasis is on the selection and application of toothbrushing devices, interproximal techniques, extraradical techniques and localization techniques; radiographic interpretation; and management of patients with special needs. (qualifies as a CAP experience)

310. Dental Hygiene Therapeutics and Practice. Lecture 3 hours; 3 credits. Prerequisite: DNTH 300 and 301. Emphasis is on the principles of periodontics, evaluation of periodontal disease, and theoretical and clinical preparation for delivery of treatments.

316. Dental Hygiene Theory and Services III. Seminar 1 hour; clinic 12 hours; 8 weeks; 3 credits. Clinical experience is in the on-campus supervised clinic. Continued development of clinical proficiency and decision making in providing comprehensive preventive oral health services using the dental hygiene process. (offered summer) (qualifies as a CAP experience)

397. Topics in Dental Hygiene Practice. 1-6 credits. Prerequisite: permission of the instructor. Selected topics in dental hygiene; topics vary by semester. (offered fall, spring, summer)

410. Dental Hygiene Theory IV. Lecture 3 hours; 3 credits. Prerequisites: DNTH 305, 306, 316. Corequisite: DNTH 411. Study of the psychosocial, oral and physical characteristics of populations with special needs. Emphasis is on the care and clinical management of the following patients: mentally and physically challenged, aged, pregnant, chronic smoker, chemical dependent and the blind and deaf. A table clinic/poster session is required. (offered fall)

411. Developmental Services IV. Clinic 16 hours; 6 credits. Prerequisites: DNTH 305, 306, 309. Corequisite: DNTH 410. Clinical experience in the on-campus supervised clinic. Continued development of clinical proficiency and decision making in providing comprehensive preventive oral health services. Emphasis is on application and development of treatment planning for special needs and periodontally involved patients using the dental hygiene process. (offered fall) (qualifies as a CAP experience)

416. Dental Hygiene Services V. Clinic 16 hours; 6 credits. Prerequisites: DNTH 410, 411. Corequisite: DNTH 417. Clinical experience in the on-campus supervised clinic or off-campus clinic practice site as determined by the instructor. Emphasis is on clinical decision making and decision making in providing comprehensive preventive oral health services. Emphasis is on clinical application, decision making, and development of clinical skills necessary for the treatment of periodontally involved and special needs patients and employment in a variety of settings. (offered spring) (qualifies as a CAP experience)

419. Community Oral Health Practice. Seminar/field experience 6 hours; 3 credits. Prerequisite: DNTH 413. Selected topics in dental hygiene to function as an oral health practitioner, educator, and resource person in a variety of community health settings. Emphasis is on providing educational and therapeutic services for special populations including geriatric, institutionalized, hospitalized, and mentally and physically challenged. Emphasis is in planning, implementing and evaluating a community dental health program project is required. (offered spring)

497/597. Independent Study in Dental Hygiene. 1-6 credits. Prerequisite: permission of instructor. Independent research and study on a topic selected under direction of a faculty member. (offered fall, spring, summer)

602. Problems in Dental Hygiene. 3 credits. Prerequisite: DNTH 495/595. Independent study course for those students in the nonthesis option. Student must conduct a research project under supervision. A written research proposal must be submitted and approved prior to beginning the project. Required for students in the thesis option. (offered fall, spring, summer)

695. Topics in Dental Hygiene. 1-6 credits. Advanced seminar in specialized subject matter. Topics vary by semester. (offered fall, spring, summer)

697. Thesis. 3 credits. Prerequisite: DNTH 668. Devoted to research, writing of the thesis, and scheduled conferences with the thesis advisor. A written thesis proposal must be submitted and approved prior to beginning the project. Required for students in the thesis option. (offered fall, spring, summer)

699. Research. 3 credits. Prerequisite: DNTH 415/515. An original thesis research project is executed with the major advisor and the departmental committee. The student's research project is supervised. A written research proposal must be submitted and approved prior to beginning the project. Required for students in the thesis option. (offered fall, spring, summer)

351. Anatomy of Speech, Language, and Hearing. Lecture 3 hours; 3 credits. Experience-based learning activities designed to provide practice knowledge and develop role competence related to the individual's area of specialization while working under the supervision of a faculty member. A clinical dental hygiene internship is a prerequisite to DNTH 669. (offered fall, spring, summer)

669. Practicum in Clinical Management. Seminar 1 hour; clinic 6 hours; 3 credits. Prerequisites: DNTH 668, 604 and permission of the instructor. Selected clinical responsibilities assigned to prepare the individual to function effectively as an organizational manager. Projects individually designed to promote growth in leadership and administrative roles in oral health care. (offered fall, spring, summer)

269EARLY CHILDHOOD, SPEECH LANGUAGE PATHOLOGY AND SPECIAL EDUCATION COURSES

Early Childhood, Speech Language Pathology and Special Education

Professors K.C. Kersey (Chair of the Department of Early Childhood, Speech Language Pathology and Special Education and Graduate Program Director of Early Childhood Education), N.G. Bountress (Graduate Program Director, Speech Pathology and Audiology), S.A. Raver-Lampman, and S.W. Tonelson. Associate Professors E.P. Ainsworth, P. Hayhurst, A.G. Masters, G. Sander, J.C. Sever and A.P. Wafflek. Assistant Professor S.R. Watson. Instructors M. B. Bountress (Clinical Speech Pathologist), C.B. Brady, G.V. DeRolf, and L. Miller-Dunley. Senior Lecturer C.S. Baker (Graduate Program Director of Special Education), Lecturer K. Fleming.

351. Anatomy of Speech, Language, and Hearing. Lecture 3 hours; 3 credits. Experience-based learning activities designed to provide practice knowledge and develop role competence related to the individual's area of specialization while working under the supervision of a faculty member. A clinical dental hygiene internship is a prerequisite to DNTH 669. (offered fall, spring, summer)

352. Phonetics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Study of the production and classification of sounds in American English; practice in phonetic transcription.

356. Classroom Management and Practicum. 2 credits. Prerequisites: passing scores on PRAXIS I or State Board of Education-approval SAT scores and acceptance into teacher education. This course prepares prospective PK-3/Special Education teachers to observe and participate in the PK-3 classroom setting and to be responsive to the intellectual, physical, emotional and social needs of PK-3 learners. A Abdullah name at all seminars is mandatory. (qualifies as a CAP experience)

500/505. Foundations/Legal/Ethical Aspects in General and Special Education. Lecture 3 hours; 3 credits. Prerequisite: Junior standing. Provides an introduction and overview of the field of special education from the perspective that it is a subsection of general education and that the public school is a microcosm of philosophical, as well as legislative and programmatic
440/540. Education of Gifted and Talented Students. Lecture 3 hours; 3 credits. Prerequisite: ESSE 450/500. This course is designed to focus on the nature and needs of the gifted and talented, in particular, the need for differentiated curriculum. Topics covered are: how to identify the gifted, how to provide the best educational environment for them, how to adjust the curriculum to varied levels of ability; teaching methods and common elements of a good program; and research on giftedness.

448/548. Speech-Language and Hearing Programs in the Public Schools. Lecture 3 hours; 3 credits. Prerequisite: ESSE 450/500 and 460/560. The emphasis of this course is on the organization and administration of public school speech-language and hearing programs, as well as on the professional and legal issues related to service delivery.

449W/549. Orientation to Clinical Procedures in Speech-Language Pathology. Prerequisite: permission of the instructor. This course provides an introduction to basic clinical procedures and concepts in speech-language pathology with an emphasis upon language sampling and identification of syntactic elements. The course also includes structured and unstructured language tasks to be done in pairs.

450/550. Survey of Communication Disorders. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. This course is designed to acquaint the student with recognition, identification, and understanding of speech and language disorders.

451/551. Articulation and Phonological Disorders. Lecture 3 hours; 3 credits. Prerequisites: ESSE 352 and 450. This course emphasizes causes, identification and treatment of disorders in articulation and phonology.

452/552. Voice Disorders. Lecture 3 hours; 3 credits. Prerequisites: ESSE 351 and 450. This course focuses upon anatomical and physiological bases, etiologies, assessment and treatment of voice disorders.

453/553. Language Development. Lecture 3 hours; 3 credits. Prerequisite: ESSE 351. This course is designed to provide students with an overview of normal language development from the perspective of the speech-language pathologist.

454/554. Clinical Practice in Speech Pathology/Audiology I, II, III. Lecture 3 hours; practicum 6 hours; 4 credits each, 3 separate semesters. Prerequisites: ESSE 351 or 450, 449/549, 450/550, 451/551, 453/553, 452/552, 454/554, completion of the 500/600 level speech pathology and audiology faculty. These practica are designed to provide students with experiences in both clinical and laboratory/clinical communication disorders (qualifies as a CAP experience).

457/557. Language Diagnosis and Remediation. Lecture 3 hours; 3 credits. Prerequisite: ESSE 450 and 453. This course provides the students with diagnostic methods and remediation techniques for the language-disordered and nonverbal student.

458/558. Speech and Hearing Science. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. The content of this course focuses upon the auditory, speech, acoustics, psychacoustics, speech perception, and clinical laboratory instrumentation. The course is designed to provide fundamental information regarding normal and abnormal aspects of speech and hearing processes.

459/559. Seminar in Speech Pathology Methods and Mater...
625. Characteristics and Assessment of Learning Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 451/551 or equivalent. This course is designed to provide students with the necessary skills to diagnose and understand the characteristics of learning disabilities. The course will address current assessment and intervention strategies for students with learning disabilities. The course will emphasize the importance of early identification and intervention. The course will also address the impact of learning disabilities on the student's ability to learn and succeed in school. The course will also address the impact of learning disabilities on the student's ability to learn and succeed in school.

626. Instructional Strategies for Students with Learning Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 450/550. The purpose of this course is to provide students with strategies for teaching students with learning disabilities. The course will address the development of instructional strategies that address the diverse needs of students with learning disabilities. The course will also address the importance of collaboration with other professionals in the development of instructional strategies.

628. Teaching Students with Severe Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 450/550. This course is designed to provide students with the knowledge and skills necessary to teach students with severe disabilities. The course will address the specific needs of students with severe disabilities and how to address those needs effectively. The course will also address the impact of severe disabilities on the student's ability to learn and succeed in school.

630. Teaching Preschoolers with Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 450/550. This course is designed to provide students with the knowledge and skills necessary to teach preschoolers with disabilities. The course will address the specific needs of preschoolers with disabilities and how to address those needs effectively. The course will also address the impact of disabilities on the student's ability to learn and succeed in school.

631. Developmental and Ecological Assessment Strategies for Students with Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 450/550. This course is designed to provide students with the knowledge and skills necessary to assess the developmental needs of students with disabilities. The course will address the specific needs of students with disabilities and how to assess those needs effectively. The course will also address the impact of disabilities on the student's ability to learn and succeed in school.

633. Sensorimotor Development and Intervention Strategies for Children with Disabilities. Lecture 3 hours; 3 credits. Prerequisite: 450/550. This course is designed to provide students with the knowledge and skills necessary to assess and intervene with children with disabilities. The course will address the specific needs of children with disabilities and how to assess and intervene with those needs effectively. The course will also address the impact of disabilities on the student's ability to learn and succeed in school.

635. Research Methods in Education. Lecture 3 hours; 3 credits. This course is designed to provide students with the knowledge and skills necessary to conduct research in the field of education. The course will address the specific methods of data collection, analysis, and interpretation. The course will also address the impact of research on educational policy and practice.

636. Problems in Education. Lecture 3 hours; 3 credits. Prerequisite: 635 and/or permission of the instructor. This course is designed to provide students with the knowledge and skills necessary to analyze and address problems in the field of education. The course will address the specific problems facing education and how to address those problems effectively. The course will also address the impact of education on society.

637. Infant/Family Intervention and Teamwork. Lecture 3 hours; 3 credits. This course is designed to provide students with the knowledge and skills necessary to work with infants and families in a team setting. The course will address the specific needs of infants and families and how to address those needs effectively. The course will also address the impact of teamwork on the education of infants and families.

650. Organic Speech-Language Disorders. Lecture 3 hours; 3 credits. This course is designed to provide students with the knowledge and skills necessary to address the organic speech-language disorders that result from neural system damage and disorders. The course will address the specific needs of students with organic speech-language disorders and how to address those needs effectively. The course will also address the impact of these disorders on the student's ability to learn and succeed in school.
Economics – ECON

Professors V. B. Agarwal (Chair of the Department of Economics) and Dr. James Wah (Director of Graduate Studies, Turner College of Business) (Dean of the Honors College, J. V. Koch (Board of Visitors Professor and President Emeritus), W. K. Talley (Beazley Professor) and G. R. Yochum (Associate Professor).)

1.716/816. At-Risk Children and Families: An Ecological Approach. Lecture 3 hours; 3 credits. An examination of the factors influencing the health and well-being of at-risk children on the achievement of at-risk children is examined. Successful teaching strategies are developed. Prerequisites: Consent of instructor and attention are discussed as the need to search for viable alternatives to strategies of past school reform.

1.737/837. Schools and Families: Enriching the Partnership. Lecture 3 hours; 3 credits. A critical examination and analysis of current trends in education as they affect the family. Emphasis will be placed on the need for parent involvement and support in the child’s education.

1.795/895. Topics in Education. Lecture 1-3 hours; 1-3 credits each semester. Prerequisite: Permission of instructor. This course offers selected topics designed to provide small classes or individual instruction on subjects of mutual interest in the special education field.

1.866. Internship: Urban Child Study/Special Education. 3 credits. This course provides doctoral students an opportunity to gain practicum experience in human service agencies, in educational settings in urban school administration, and in other community education training projects.

1.895. Dissertation. 1-2 credits. Prerequisite: Completion of candidacy examination.

This course examines the interaction between government and the economy, with particular emphasis on the role of the federal government. Emphasis is placed on government involvement in the economy including market failure, income inequality, and redistribution of income. Special topics include unemployment, Social Security, Medicare, welfare programs, and the social security system.

4.275/527*. Industrial Organization and Public Policy. Lecture and discussion 3 hours; 3 credits. Prerequisites: ECON 201S, 202S and completion of ECON 205S and permission of the instructor) and junior standing or permission of the chief departmental advisor. This course will survey the history of government involvement in the economy including market failure, income inequality, and redistribution of income. Special topics include unemployment, Social Security, Medicare, welfare programs, and the social security system.
problems of economic growth, income distribution, poverty, urbanization, uneven development, agricultural policy, economic policy, trade policy, balance of payments, finance, and currency crises. To illustrate these issues we will examine the problems of certain individual countries, e.g., Argentina, Kazakhstan, South Korea, India, Mexico, Kenya, Indonesia, and Thailand. In the course we try to strike a balance between economic theory and institutional economics. Additional reading will be assigned from time to time.

453/555. Comparative Economic Systems. Lecture and discussion 3 hours; 3 credits. Prerequisites: ECON 201S, 202S and junior standing or permission of the chief departmental advisor. An analysis of the basic elements of capitalism as compared with collectivist types of economic systems.

456/556. Economics of Information and E-Commerce Strategy. Lecture 3 hours; 3 credits. Prerequisites: ECON 201S, 202S and junior standing or permission of the chief departmental advisor. A course designed for decision makers involved in information and e-commerce strategy. Focus is on the interplay between economic theory of the firm and market, partial and general equilibrium analysis, and imperfect competition.


708/806. Econometrics I. Lecture 3 hours; 3 credits. Corequisite: ECON 625. Prerequisites: ECON 604 or equivalent and 612 or equivalent. Single-equation econometric models; serial correlation, heteroscedasticity, specification error, missing observations and error in variables; and forecasting.

708/807. Econometrics II. Lecture 3 hours; 3 credits. Prerequisite: ECON 706/806. Multi-equation econometric models; problems such as identification, single-equation estimation, equation estimation systems, and model evaluation techniques; time-series models such as moving average and autoregressive models; forecasting with time-series models.

121. Global and Applied Macroeconomics. Lecture 3 hours; 3 credits. Prerequisite: ECON 604 or permission of instructor. Study of international trade, mathematical models of trade, instruments of trade policy, theory and practice of economic integration, trade liberalization issues from international and regional viewpoints.

753/853. International Finance. Lecture 3 hours; 3 credits. Prerequisite: ECON 612 or 650 or equivalent. International capital flows, exchange rates and price level, international capital movements, causes of international balance and imbalance, balance-of-payments adjustments. Monetary magnitudes as a basis for insight into international financial policies.

754/854. Economic Development. Lecture 3 hours; 3 credits. Prerequisite: ECON 304 or 604 or 650. Introduction to the problems of economic development in the third world, including the problems of economic growth, income distribution, poverty, urbanization, uneven development, agricultural policy, economic planning, industrial policy, trade policy, balance of payments, finance, and currency crises.

755/855. Selected Topics in Economics. 3 credits. Prerequisite: ECON 604 or equivalent. Special topics in economics.

ECON 621. Public Finance. Lecture 3 hours; 3 credits.Prerequisite: ECO 604. Economics of collective action; theoretical and empirical analysis of externalities; externalities and public policy; the demand and supply of public goods; public choice; theoretical and empirical analysis of taxation and the shifting of tax incidence and income redistribution.

625. Mathematical Economics. Lecture 3 hours; 3 credits. Prerequisite: MATH 200 or equivalent. ECON 604; ECON 612; or ECON 650. This course focuses on the use of mathematics in solving economic problems. Problems of primary emphasis is given to matrix algebra, integral calculus, constrained optimization techniques and dynamical systems.

626. Industrial Economics and Public Policy. Lecture 3 hours; 3 credits. Prerequisite: ECON 604. Analysis of the determinants of product and industry behavior models with emphasis on public policy implications.

650. International Economics. Lecture and discussion 3 hours; 3 credits. Prerequisite: ECON 504 or 604 or 202S or 205S and 206S. Prerequisites: ECON 201S, 202S and junior standing or permission of instructor. Introduces students to the major economic factors which influence the structure of urban areas and contribute to modern urban problems.

688. Economics Internship. 3 credits. Prerequisites: 12 hours of economics and permission of the graduate coordinator (enrollment is subject to the availability of internships); 3 credits. Prerequisites: ECON 604 or 650. Economics of collective action; theoretical and empirical testing of the economic factors which influence the structure of urban areas and contribute to modern urban problems.

697. Readings in Economics. 3 credits. Individual readings in unexplored field under the direction of a faculty member of the department.

698. Economic Methodology and Research, 3 credits. Individual research under the direction of a faculty member of the department.


1201. Introduction to Teacher Education. Lecture 1 hour; 1 credit. Prerequisite: junior standing or permission of instructor. Introduces students interested in teacher education, the University, College of Education, and the profession of teaching.

304. Educational Applications of Computers. Lecture 3 hours; 3 credits. Prerequisite: functional competency (see http://www.odu.edu/educ/itd/304_350) using productivity software such as word processing, spreadsheet, database, presentation and software for the classroom. Prerequisite: ECI 301 and 304 or ELC 300. This course is designed for students who wish to study the relationship between contemporary learning theories and SOL-related classroom computer use. Additional Text: Texas Computer Standards for Instructional Personnel (TISP) competencies.

352. Instructional Strategies in the Language Arts in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: ECI 304 and ENGL 350. Explores and develops teaching strategies, techniques, and materials for teaching the language arts in the elementary school, with emphasis upon multi-level learning activities.

353. Instructional Strategies in Mathematics in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisites: ECI 304 and nine credits of mathematics. Emphasizes number concepts, place and meaning of drill, arithmetic as structured learning; surveys current issues in teaching arithmetic; and describes recent experimental programs in elementary schools.

354. Instructional Strategies in Science for the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: ECI 304. Addresses use of materials and activities to promote children’s development of attitudes, beliefs, values, and behaviors.

355. Instructional Strategies in Social Studies in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisites: ECI 304 and 306. Examines teaching strategies, techniques, and tactics for teaching social studies in the elementary and middle school grades.

360. Classroom Management and Discipline. Lecture 2 hours; 2 credits. Prerequisite: ECI 301. Examines theories, research, and practical applications of classroom management, motivation, and discipline. Explores techniques for organizing and arranging classroom environments that are most conducive to learning.

406/506. Teaching in the Multicultural Classroom. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Explores the teaching strategies, materials and understandings needed in classroom environments for children from diverse cultural, ethnic, economic and linguistic backgrounds.

408. Reading and Writing in Content Areas. Lecture 2 hours; 2 credits. Prerequisites: ECI 301, 310, ESSE 413. Examines and promotes understanding and use of classroom research to enhance learning in content areas, including a repertoire of questioning strategies, summarizing and retelling strategies, and strategies in literal, interpretive, creative, and expository writing. Assessment of reading and writing across the curriculum, grades 6-12.

412/512. Fundamentals of Adolescent Development. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Explores the educational implications of biological, cognitive, emotional, social and sexual development of adolescents. The influence of the family, peers, and society on adolescent learners will be examined. Students will apply developmental principles in educational settings.

430/530. Instructional Technology and the Classroom. Lecture 3 hours; 3 credits. Prerequisite: functional competency (see http://www.odu.edu/educ/itd/304_350) using productivity software such as word processing, spreadsheet, database, presentation and the Internet. Examination of classroom technology, learning theories and cognitive psychology that are explored by technology, and strategies synthesized through projects. Course uses contemporary productivity software, authoring tools, and Internet resources to develop and evaluate classroom instruction, and K-12 SOL-related curriculum materials. Additional Text: Texas Computer Standards for Instructional Personnel (TISP) competencies.

432/532. Developing Instructional Strategies PreK-6: Language Arts. Lecture 3 hours; 3 credits. Prerequisites: ECI 301 and 304. Focuses on practice of planning, exploring, and developing language arts instruction with an emphasis on contemporary strategies and SOL-related content. Additionally, this course is designed for teachers in grades PreK-6 in support of NCTE national instructional standards and the Virginia Standards of Learning.

433/533. Developing Instructional Strategies PreK-6: Mathematics. Lecture 3 hours; 3 credits. Prerequisites: ECI 301 and 304. Following a theory into practice philosophy,
students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of abilities, behaviors, and concepts in grades Pre-K-6 in support of NCTM national instructional standards and the Virginia Standards of Learning.

434/534. Developing Instructional Strategies PreK-6: Science. Lecture 3 hours; 3 credits. Prerequisites: ECI 301 and 304. Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of abilities, behaviors, and concepts in grades Pre-K-6 in support of AAAS national instructional standards and the Virginia Standards of Learning.

356. Classroom Management and Practice PreK-6. Lecture 2 hours; 2 credits. Prerequisites: Passing scores on PRAXIS I or State Board of Education-approved SAT scores, acceptance into Teacher Education, and at least two of the following courses: ECI 432/532, ECI 433/533, ECI 434/534, ECI 435/535. This course prepares prospective Pre-K-6 teachers to provide instruction and management consistent with Pre-K-6 philosophy and to be responsive to the intellectual, physical, emotional and social needs of Pre-K-6 learners. This course includes analysis of classroom instructional strategies, materials, and technologies, and activities to promote children's development of abilities, behaviors, and concepts in social studies, grades 6-12, informed by national instructional standards and the Virginia Standards of Learning.

461/561. The Teaching of Reading in the Content Areas. Lecture and practicum; 3 credits. For MCTP students only. Prerequisite: senior standing/graduate standing. Corequisite: ECI 454. This course focuses on the techniques of reading for elementary and secondary classroom teachers are provided.

475/575. Web Development for Educators. Lecture 3 hours; 3 credits. Prerequisite: senior standing/graduate standing. Provides both a conceptual framework and hands-on experience with development of online web resources for educators. The course introduces the student to the various uses and features of online tools and technologies, including instructional design, and explores best practices in the use of the web to enhance learning. Topics include fundamentals of web authoring, web tools and techniques, and functional use of HTML and derivatives.

483. Senior Seminar in Education. Lecture 1-2 hours; 1-2 credits. Corequisite: ECI 454/554. This seminar is for those who have completed approved teacher education programs. Explores issues, problems, concepts related to student teaching and to entering the profession of teaching.

485. Student Teaching. Five days per week; full semester; 12 credits. Prerequisites: completion of an approved program in teacher education, successful completion of exit writing examination, passing scores on PRAXIS I (PPST) exam or State Board of Education-approved SAT scores, passing scores on the appropriate PRAXIS II content examination, departmental approval, and permission of the director of student teaching. Available for pass/fail grading only. Internship in school, (qualifies as a CAP experience)

486/586. Student Teaching for Special Endorsement. Five days per week; full semester; 12 credits. Prerequisite: completion of appropriate content area examinations, appropriate credits, professional certification and/or passing scores on PRAXIS I (PPST) exam or State Board of Education-approved SAT scores, departmental approval, and completion of appropriate PRAXIS II content examination, departmental approval, and permission of the director of teacher education services. Available for pass/fail grading only. Internship in a school setting. (qualifies as a CAP experience)

495/595. Topics in Education. Lecture 1-4 hours; 1-4 credits. Prerequisite: junior or graduate standing. Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

496/596. Topics in Education. Lecture 1-3 hours; 1-3 credits. Prerequisite: permission of the Department. Explores contemporary topics in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

497/597, 498/598. Topics in Education. Hours to be arranged: 1-3 credits. Prerequisite: junior or graduate standing. Allows the student to engage in independent study and research in a specific area of interest. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

600. Introduction to Graduate Research in Curriculum and Instruction. Lecture 1 hour; 1 credit. Prerequisite: graduate standing. Should be taken among the first courses in the student's master's degree program. Introduces students to the process of conducting research and authoring: screen design, use of Web page creation tools, and technologies, investigates online learning strategies, and student to the various uses and features of online tools and technologies, including instructional design, and explores best practices in the use of the web to enhance learning. Topics include fundamentals of web authoring, web tools and techniques, and functional use of HTML and derivatives.

662. Production of Instructional Materials. Lecture 3 hours; 3 credits. Prerequisite: graduate standing and one of the following: five years of general education computer literacy course (e.g., OTS 251D), equivalent course, or passing score on the computer equivalency exam administered by the Old Dominion testing center. Emphasis is on the selection and utilization of non-book materials and equipment and technological developments in the creation of instructional materials, information technologies, systems management and information policies, and network development and management.

688. Philosophical Foundations of Education. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Discusses several philosophical systems supporting educational practice in the United States and foreign countries.

692. Classroom Management. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Examines classroom management and discipline theories, models, applications, and cases in grades 6-12, with an emphasis on teachers developing a personal philosophy and model of classroom management.

694. Teaching in the Middle School. Lecture 4 hours; 4 credits. Prerequisite: graduate standing. Focusing on middle school teaching, this course examines the organization, curriculum, instructional strategies, and class management techniques, and teaching methods for working with young adolescents. Also covered are middle school guidance, extracurricular and co-curricular programs, and community service and alternative education programs. A 30 hour practicum in a middle school is required.

695. Design for Effective Instruction. Lecture 3 hours; 3 credits. Prerequisite: senior standing. This course focuses on the role of the professional educator in the socialization process of American youth with exposure to the importance of (1) planning, (2) teaching, (3) student learning, and (4) reflections and professional growth in education. Acquaints students with present interactions, and issues affecting today's schools, as well as the legal status of teachers and students, and the school as an organizational/cultural change agent. Includes analysis of classroom instructional practice through a 30-hour clinical observation and journaling sessions.

697. Evaluation in Education. Lecture and practicum; 3 credits. For MCTP students only. Prerequisite: senior standing/graduate standing. Corequisite: ECI 454. This course focuses on the techniques of reading for elementary and secondary classroom teachers are provided.
program design, and evaluation of skill improvement.

638. Dynamic Assessment of Teaching and Learning. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. In this first course in the Field Based Graduate Program, students conduct an extensive qualitative and/or quantitative assessment of student learning in dynamic K-12 school settings. The assessment will include school culture, student demographics, curriculum, instructional practices, technology use, and other optional components of teaching and learning. Analysis of the assessment will result in a document that emphasizes a professional development plan.

639. Seminar in Education. Hours to be arranged; 3 credits. Prerequisite: 15 hours in graduate education, including a course in depth of expertise in an area of current trends and concerns in K-12 education.

640. The Management of Learning and Instruction. Lecture 3 hours; 3 credits. Emphasizes problems and projects in the specialized areas of educational management and instructional management. This course may be taken by new and experienced students and teaching professionals.

642. Children’s Literature Across the Curriculum. PK-8. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Provides experience in the creation of trade books for the classroom and for children's literature. Materials for adolescents and adults with limited reading abilities are also covered.

643. Literature in Secondary Schools. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Provides an opportunity to analyze young adolescent books and their appeal to youth. Methodologies for capitalizing on this appeal and incorporating a bibliography of appropriate selections are developed and evaluated. Professional resources and multi-disciplinary avenues are emphasized along with traditional choices from the Western Canon.

646. Distance Education. Lecture 3 hours; 3 credits. Introduces the student to the field of distance education. Focuses on current research and development projects in distance education, the new medium's requirements for differing modes of delivery, and instruments used for evaluation. This class will be delivered via computer video conferencing, and will give the student the opportunity to experience the unique requirements of teaching in a distance education environment.

647. Online Learning. Lecture 3 hours; 3 credits. Theoretical and applied survey of the field of online learning, with an emphasis on asynchronous environments. The course will focus on the current research and development in distance education, and the use of computer conferencing and virtual reality tools. Topics will include facilitating online discussion, using interactive simulations, and learning online with video conferencing, and will give the student the opportunity to experience the unique requirements of teaching in a distance education environment.

648. Digital Media for Educators. Lecture 3 hours; 3 credits. Course surveys a variety of tools, techniques and technologies used for creating and managing digital media, and explores how digital tools can be integrated into the design and development of digital learning products using contemporary software such as Acrobat, Flash, Graphic Interactivity (GIF) and HTML. Students will gain hands-on experience in the creation of digital media elements suitable for use in traditional and distributed learning environments. Includes technical considerations of graphics manipulation and design, sound and video elements, and animation.

651. Social Studies Curriculum Innovation. Lecture 3 hours; 3 credits. Course examines the techniques and processes required for developing a comprehensive educational program for K-12 students. Emphasis will be placed on the development of educational programs that are sensitive to the needs of individual students, and that are designed to meet the educational needs of diverse populations. Students will be required to develop a comprehensive educational program for K-12 students.

652. Language Arts in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course introduces the student to the fundamental concepts of curriculum design, instructional design, curriculum integration, and program effectiveness. Successful students will be prepared to make recommendations for the improvement of learning environments.

653. Mathematics in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course introduces the student to the fundamental concepts of curriculum design, instructional design, curriculum integration, and program effectiveness. Successful students will be prepared to make recommendations for the improvement of learning environments.

654. Social Studies in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course introduces the student to the fundamental concepts of curriculum design, instructional design, curriculum integration, and program effectiveness. Successful students will be prepared to make recommendations for the improvement of learning environments.

655. Social Studies in the Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course introduces the student to the fundamental concepts of curriculum design, instructional design, curriculum integration, and program effectiveness. Successful students will be prepared to make recommendations for the improvement of learning environments.

656. Developing Instructional Strategies for Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course will focus on the selection of appropriate skills and objectives for teaching and learning. Emphasis will be placed on the development of instructional strategies that are appropriate for the needs of the elementary/middle school student.

657. Developing Instructional Strategies for Elementary/Middle School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course will focus on the selection of appropriate skills and objectives for teaching and learning. Emphasis will be placed on the development of instructional strategies that are appropriate for the needs of the elementary/middle school student.

658. Math Methods for Middle and Secondary School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course will focus on the selection of appropriate skills and objectives for teaching and learning. Emphasis will be placed on the development of instructional strategies that are appropriate for the needs of the elementary/middle school student.

659. Math Methods for Middle and Secondary School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course will focus on the selection of appropriate skills and objectives for teaching and learning. Emphasis will be placed on the development of instructional strategies that are appropriate for the needs of the elementary/middle school student.

660. Cognition and Instructional Design. Lecture 3 hours; 3 credits. Students will be introduced to the theoretical frameworks that form the basis of instructional systems theory and design. Focus will be on learning theories, instructional psychology, and instructional system theory. Recent developments in cognition, learning, and instruction for educators will also be considered. Topics include perspectives of behaviorism, socio-historical construcivism, cognitive constructivism, situated cognition, and cultural influences on cognition.

661. Social Studies Methods for Middle and Secondary School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course is designed to give prospective social studies teachers practical applications of current social science instructional theories. The student will encounter the processes involved through the use of philosophy and the exploration of psychology, the use of research, laboratory experimentation, interactive technology, instructional media, and the use of assessment techniques.

662. Social Studies Methods for Middle and Secondary School. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. This course is designed to give prospective social studies teachers practical applications of current social science instructional theories. The student will encounter the processes involved through the use of philosophy and the exploration of psychology, the use of research, laboratory experimentation, interactive technology, instructional media, and the use of assessment techniques.

663. Current developments and educational research are applied to instruction and learning. Analysis of the assessment will result in a document that emphasizes a professional development plan.

664. Internship/Student Teaching. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Students will have the opportunity to gain practical experience in a variety of educational settings. The experience will be evaluated through a capstone project and a comprehensive evaluation of the teaching experience.

665. Internship/Student Teaching. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Students will have the opportunity to gain practical experience in a variety of educational settings. The experience will be evaluated through a capstone project and a comprehensive evaluation of the teaching experience.

666. Internship/Student Teaching. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. Students will have the opportunity to gain practical experience in a variety of educational settings. The experience will be evaluated through a capstone project and a comprehensive evaluation of the teaching experience.

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ECI 361. Provides classroom teachers with strategies/techniques to employ to ongoing diagnosis and remediation through the use of standardized and non-standardized standardized test scores to select appropriate instructional strategies for pupils' existing reading capabilities.

685. Observing and Supervising Reading Program Development. Lecture 3 hours; 3 credits. Prerequisite: 9 graduate hours in reading. Presents an overview of the total school reading program, and not preparing the prospective reading supervisor to make decisions pertaining to the procurement of materials for the program but also introduces models for integrating reading into the general curriculum.

689. Survey of Reading Instruction. Lecture 3 hours; 3 credits. Prerequisite: ECI 359. Reading supervision. Surveys the linguistic, psychological, sociological, philosophical, and historical foundations of current reading pedagogy.

693. Principles of Technical Writing. Lecture 3 hours; 3 credits. Prerequisite: 15 hours in graduate reading and permission of the instructor. This course provides graduate teachers with opportunities for practice and further refining their understandings of the reading process in clinical and classroom settings. Teachers provide both individual and group reports on their teaching in the local community. Advanced diagnostic tests of learning processes and intellectual capacity are covered. These advanced diagnostic tests are prerequisites to those covered in the initial diagnostic reading course.

694. Practicum in Reading. Hours to be arranged; 3 credits. Prerequisite: ECI 361 and permission of the instructor. This course provides an opportunity for teachers in a practicum situation to further refine their skills in teaching reading. Teachers work with students from the local community.

695. Topics in Education. Lecture 1-3 hours; 1-3 credits. Prerequisite: Graduate standing. Provides opportunities for graduate students to explore current topics, trends and issues related to curriculum, instructional strategies, and evaluation.

697. Topics in Secondary School Instruction. Lecture 1-3 hours; 1-3 credits. Prerequisite: Graduate standing. Provides opportunities for graduate students to explore current topics, trends and issues related to curriculum, instructional strategies, and evaluation.

701/801. Seminar in Urban Education: Theories of Learning and Instruction. Lecture 3 hours; 3 credits. Prerequisite: Permission of advisory group. Provides overview and investigation of theories of learning and models of teaching, with focus on pupils in urban settings.

721/821. Advanced Curriculum and Development. Lecture 3 hours; 3 credits. Prerequisite: Graduate standing. Focuses on the process of building a curriculum, historical developments in curriculum design, alternative curricula, current and future trends in curriculum development, and research in curriculum development.

722/822. Curriculum Seminar in Content Areas. Lecture 3 hours; 3 credits. Prerequisite: Graduate standing. Investigates the role and nature of the curriculum for a particular subject matter specialization — i.e., math, social studies, science, etc. Each content area has its own course description and objectives.

724/824. Readings in Contemporary Society. Lecture 3 hours; 3 credits. Prerequisite: Graduate standing. Surveys the literature related to the issues and trends in contemporary society and provides educators with a substantive base in the philosophy, history, theory, and strategies relevant to curriculum development.

726/826. Advanced Supervision of Reading Programs. Lecture 3 hours; 3 credits. Prerequisite: ECI 690. Explores various models of supervision and relates them to the administration and supervision of reading programs. Also prepares the candidate to make decisions relative to the methods and materials used to teach reading.

727/827. Advanced Practicum in Reading. 3 credits. Prerequisite: ECI 693. This course is designed for teachers who have completed the initial reading practicum. Its focus is on the refinement and further development of those skills work with students experiencing reading difficulties. Both group and individual tutoring experiences will be provided. Ways will be explored to encourage involvement in existing educational programs and schools.

728/828. Problems and Inservice in Reading/Literacy Research. Lecture 1-6 credits each semester. Prerequisite: E.C.I. 691. Reading Education. Directed study of current topics of interest to students involved in literacy research. Topics include the refinement and improvement of research programs, and other areas of investigation. Students will be required to prepare a scholarly paper reporting results functionally.

730/830. Practicum: Microcomputers in Educational Management. Lecture 3 hours; 3 credits. An introduction to the implementation of microcomputer technology in the total educational environment. Topics discussed include data management applications, classroom applications, educational games, and course management. Focus of the course is on the use of the microcomputer for the collection and management of data, groupware, and instructional aids. The course is 4 credits. Graduate students only. CPE 442. Linguistic and Pedagogical Analysis. Lecture 3 hours; 3 credits. Prerequisite: ECI 726/826. This course is intended for students who have completed courses in linguistics or have completed a major in Advanced Research in Language and Society. A prerequisite for advanced graduate study in linguistic analysis. This course is only for graduate students.

730/830. Practicum: Microcomputers in Educational Management. Lecture 3 hours; 3 credits. An introduction to the implementation of microcomputer technology in the total educational environment. Topics discussed include data management applications, classroom applications, educational games, and course management. Focus of the course is on the use of the microcomputer for the collection and management of data, groupware, and instructional aids. The course is 4 credits. Graduate students only. CPE 442. Linguistic and Pedagogical Analysis. Lecture 3 hours; 3 credits. Prerequisite: ECI 726/826. This course is intended for students who have completed courses in linguistics or have completed a major in Advanced Research in Language and Society. A prerequisite for advanced graduate study in linguistic analysis. This course is only for graduate students.

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Electrical and Computer Engineering — ECE


201. Circuit Theory I. Lecture 3 hours; 3 credits. Corequisites or prerequisites: MATH 307 and PHYS 232A. An in-depth study of electrical circuits. Component definitions and connection rules; formulation and solution of mesh-current and node-voltage equations; design of network reduction analysis techniques and network theorems; modeling of two port networks; and representation and operations on piecewise-continuous signals. Introduction to energy storage elements; time domain analysis of first order circuits. (offered fall, spring, summer)

202. Circuit Theory II. Lecture 3 hours; 3 credits. Corequisites: ECE 201 and MATH 307. Time domain analysis of second order circuits. A thorough treatment of frequency response, domain analysis, and operational amplifiers. Laplace transforms. AC steady-state analysis, phasors, complex and storage power; complex frequency, and frequency response. Basic filtering principles and applications. (offered fall, spring, summer)

241. Digital Logic. Lecture 3 hours; 3 credits. Prerequisites: CS 202. Corequisite: ECE 284. Basics of digital logic systems, information codes, Boolean algebra, gates, minimization, combinational circuits, flip-flops and sequencers, coded number systems, and timing diagrams. MSI,LSI, and PLD circuits and digital logic simulation techniques. (offered fall, spring)

284. Digital Design Laboratory. Lecture 1 hour; laboratory 3 hours; 2 credits. Corequisite: ECE 241. Design, implementation, and testing of digital sequential circuits and simple interconnects. Introduction to computer-aided design tools for logic devices. Synthesis of digital circuits using programmable logic devices. Laboratory projects emphasize both practical design considerations and theoretical modeling concepts and simulation associated with digital circuit design. (offered fall, spring)

286. Computer Aided Tools in Electrical and Computer Engineering, Lecture 1 hour; 1 credit. Corequisite: ECE 202. The course will focus on application of ORCAD Pspice computer tools to the introductory study of electric circuits. Circuit simulation knowledge is a must for most electrical and computer engineering students. A review of some of the mathematical skills required for ECE with emphasis on circuit analysis will be presented.

302. Linear Systems. Lecture 3 hours; 3 credits. Prerequisites: ECE 202 and MATH 231. Focus on the domain representation of linear systems. Methods of linear system analysis, including convolution and Laplace transforms. Frequency domain representation of signals including Fourier series and Fourier transforms. Formulation and solution of state variable equations. (offered fall, spring)

304. Probability, Statistics, and Reliability. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Introduction to probability, random variables, statistics, and reliability. Applications include modeling of physical systems, data analysis, communications, queuing, component and system reliability. (offered fall, spring)

313. Electromagnetics. Lecture 3 hours; 3 credits. Prerequisite: ECE 202. Corequisites or corequisites: ECE 241 and MAT 307. Corequisite: ECE 382. Design concepts for analog and digital-logic circuits utilizing operational diode and bipolar junction transistors, and field-effect transistors. Introduction to device physics and the development of operational amplifiers (analog) and TTL and CMOS (digital) gates.

332. Electromagnetics. Lecture 3 hours; 3 credits. Prerequisite: ECE 202. An introduction to electromagnetic wave theory and its application to the design of microwave and optical components. Propagation of waves across interfaces; propagation in waveguides and transmission lines. Antennas and radiation from antennas.

351. Circuits and Systems of Modern Technology. Lecture 3 hours; 3 credits. Prerequisites: ECE 202 and MATH 231. Students will be taught to converse with student magnitudes in other domains as an engineer of the fundamentals of the physical laws and engineering approaches to advance the technology of the computer and information systems. Principles of logic, memory, and microprocessor systems.

396. Topics in Electric Power Systems, 1-3 credits. Prerequisites: master’s degree and permission of the instructor.

399. Dissertation. 1-12 credits. Prerequisite: permission of faculty advisor.
will be characterized by current-voltage characteristic, capacitance-voltage characteristic, film thickness and contact resistance. Microcircuits systems will be introduced such as submicron VLSI technology, introduction to rf communication, the physics and design of rf-antennas.

474. Laser and Laser Applications in Engineering. Lecture 3 hours; 3 credits. Prerequisites: ECE 313, 382 and MATH 312. Application of lasers in various areas of engineering will be covered. Topics include principles of laser physics, laser fabrication techniques, and the interfacing of TTL gates. CAD tools (PSPICE) will be utilized. (offered fall, spring)

475. Optical Communications. Lecture 3 hours; 3 credits. Prerequisites: ECE 323 and MATH 312. Electromagnetic waves; components used in optical communication systems; optical emitters, modulators, detectors and photodetectors; lightwave systems; introduction to rf communication, the physics and design of rf-antennas.

481. Digital Signal Processing I. Lecture 3 hours; 3 credits. Prerequisites: ECE 341, 443, 446, 545, and 546. An introduction to digital signal processing. Design, analysis and test of systems for communication, control, and image processing. (offered fall)

482. Electrical Engineering Design II. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: ECE 488. Part of the senior capstone design experience for electrical engineering majors. Individual and group design projects focus on the development of complete electronic systems. Oral and written communication skills are stressed. Industry-sponsored multi-disciplinary design projects are an option. (offered fall, spring)

487. Electrical Engineering Design III. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: ECE 488. Part of the senior capstone design experience for electrical engineering majors. Individual and group design projects focus on the development of complete electronic systems. Oral and written communication skills are stressed. Industry-sponsored multi-disciplinary design projects are an option. (offered fall, spring)

492. Computer Engineering Design I. Lecture 1 hour; laboratory 3 hours; 2 credits. Prerequisites: ECE 313, 341, 382, and 446. Emphasis is on the design of controller and microcontroller interfacing. Design methods incorporate CAD design tools and implementation with advanced integrated circuit technology. Several moderate scale digital modules are designed, simulated, implemented and tested during the semester. (offered fall)

498W. Computer Engineering Design II. Lecture 1 hour; laboratory 4 hours; 3 credits. Corequisite or prerequisite: CS 471. Prerequisite: ECE 443 and 488. Emphasis is on the design of a complex architecture as an extension of the design modules used in ECE 443 and 488. A semester-long project involving the design, simulation and testing of a complex architecture and software GUI. Design methodologies for digital and analog circuits are used throughout. Advanced integrated circuit technology and contemporary software tools. Oral and written communication skills are stressed. (offered fall, spring)

499. Microelectronics Design Experience. Lecture 3 hours; 3 credits. Prerequisite: junior standing in electrical or computer engineering. This is a one-credit summer project on a microelectronics research or design activity at an engineering school or industry member of the Virginia Microelectronics Consortium (VMEC). For eligibility, the student must be selected as a VMEC Student Scholar in a competition held early in the spring semester of each academic year. Each student project involves at least two formal oral reports and one formal written report. The project must be completed at an institution other than Old Dominion University. Students will be supervised by faculty or industry mentors at the summer location, but must also have an Old Dominion University co-advisor and instructor of record for the course.

495/495, 496/596. Topics in Electrical and Computer Engineering. Lecture 1 to 3 hours; 1 to 3 credits each semester. Prerequisites: depend on course. Team projects consisting of the design and implementation of projects requiring the programming and integration of hardware and software systems. Topics include computer engineering. The student will complete a 10-week activity at an engineering school or industry member of the Virginia Microelectronics Consortium (VMEC). For eligibility, the student must be selected as a VMEC Student Scholar in a competition held early in the spring semester of each academic year. Each student project involves at least two formal oral reports and one formal written report. The project must be completed at an institution other than Old Dominion University. Students will be supervised by faculty or industry mentors at the summer location, but must also have an Old Dominion University co-advisor and instructor of record for the course.

501. Electronic Circuits. Lecture 3 hours; 3 credits. Prerequisite: ECE 202 or permission of the instructor. An introduction to the design and analysis of electronic circuits. Topics include fundamental circuit analysis and components, state variable feedback. Stability, sensitivity, root locus, Bode and Nyquist techniques. Pole placement and state feedback techniques are also covered.

502. Commissioning and Diagnostic Techniques. Lecture 3 hours; 3 credits. Prerequisites: ECE 202 or permission of the instructor. Diagnostic techniques; applications of lasers in engineering, technology, science and medicine.

504. Field Theory and Electromagnetics. Lecture 3 hours; 3 credits. Prerequisites: ECE 313 and 382, or MATH 312. Application of lasers in various areas of engineering will be covered. Topics include principles of laser physics, laser fabrication techniques, and the interfacing of TTL gates. CAD tools (PSPICE) will be utilized. (offered fall, spring)

506. Linear Systems. Lecture 3 hours; 3 credits. Prerequisite: MATH 307. A comprehensive introduction to the theory of linear dynamical systems from an input/output and state space point of view. Concepts from linear algebra, numerical linear algebra and linear operator theory are applied throughout. Some elements of state feedback design and state estimation are also covered.

508. System Modeling. Lecture 3 hours; 3 credits. Prerequisite: MATH 307. An introduction to the theory of probability or statistics. Course focuses on discrete event analysis and modeling as found in engineering systems. Some elements of state feedback design and state estimation are also covered.

509. Control System Design. Lecture 3 hours; 3 credits. Prerequisites: ECE 313, 382, and 395. Topics include control system modeling, stability, and design of control systems for applications in power generation, power systems, and aerospace systems. Root locus, Bode and Nyquist techniques. Pole placement and state feedback techniques are also covered.

510. Feedback Control Systems. Lecture 3 hours; 3 credits. Prerequisite: ECE 323. Design, analysis and test of systems for communication, control, and image processing. (offered fall, spring)

512. Power Electronics. Lecture 3 hours; 3 credits. Prerequisites: ECE 332 and 336. Power electronics: Devices, circuits and systems. (offered fall)

513. Circuits. Lecture 3 hours; 3 credits. Prerequisite: ECE 202 or permission of the instructor. An introduction to the design and analysis of electronic circuits. Topics include fundamental circuit analysis and components, state variable feedback. Stability, sensitivity, root locus, Bode and Nyquist techniques. Pole placement and state feedback techniques are also covered.
Methods, and application decomposition issues. Final virtual prototyping, design abstractions, hardware modeling structures. Emphasis on engineering aspects of design.

Advanced Digital Design. Lecture 3 hours; 3 credits. This course introduces methods for using high level hardware description language such as VHDL and/or Verilog for the design of digital architecture. Topics include top-down design approaches, virtual prototyping, design abstractions, hardware modeling techniques, algorithmic and register level design, synthesis methods, and application decomposition issues. Final design project is required.

Stochastic Analysis and Simulation. Lecture 3 hours; 3 credits. Prerequisites: MATH 307 and one undergraduate course in probability or statistics. An introduction to the basic concepts and statistical techniques for analysis of signals and systems. This includes a review of probability, spaces, random variables, and random or stochastic processes of systems. Random numbers and stochastic inputs are considered.

Wireless Communications Networks. Lecture 3 hours; 3 credits. Prerequisite: Permission of Instructor. Introduction to wireless networks, wireless systems (fixed and mobile), cellular systems, propagation effects (fixed, mobile and personal), and networking technologies. Emphasis includes diversity and channel coding, speech processing for wireless, wireless standards, existing and future wireless systems (proprietary, competitive).

Cooperative Education. 1-3 credits. Available for pass/fail grading only. Student participation for credit based on completion of the work, evaluation criteria, and evaluative procedures as formally determined by the department and the Cooperative Education/Career Management program prior to the semester in which the work experience is to take place.

Internship. 1-3 credits. Prerequisite: Approval by department and Career Management. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students an opportunity to gain short duration career related experience. Meant to be used for one-time experience. Work may or may not be paid. Project completed during the term.

Advanced Aqueous Electronics. Lecture 3 hours; 3 credits. Prerequisites: ECE 472/572 or permission of instructor. Study of metal, gas discharge, elastic and inelastic collisions, electron density processes, distribution functions and the Boltzmann equation, transport coefficients, fluid equations, breakdown theory, application for switches and gas lasers.

Semiconductor Characterization. Lecture 3 hours; 3 credits. Prerequisite: ECE 461/561 and 601. Introduction of basic methods for semiconductor material and device characterization. Topics include resistivity, carrier doping concentration, contact resistance, Schottky barrier height, series resistance, channel length, threshold voltage, mobility, oxide and interface trapped charge, deep level impurities, carrier lifetime, and optical, chemical and physical characterization.

Plasma Surface Engineering. Lecture 3 hours; 3 credits. Prerequisite: ECE 475/575 or permission of instructor. Study of plasma processes of importance to material processing types of plasma reactors, fundamental processes occurring at the plasma surface interface, overview of diagnostics techniques of surface structure, chemical and electronic probes will be given.

Advanced Semiconductor Devices. Lecture 3 hrs; 3 credits. Prerequisite: ECE 461/561. The course will focus on the physics, operational principles, and applications of advanced semiconductor devices relevant to future high performance systems. Topics to be covered include microwave IMPATTs and TEDs; NERFETs and surface acoustic wave devices; laser plus propagation. Non-linear processes include harmonic generation, wave mixing and Raman scattering.

Distributed Computer Simulation. Lecture 3 hours; 3 credits. Prerequisite: ECE 601 and 651. Basic principles and applications of program and process simulation of complex systems. Parametric and non-parametric techniques including neural networks. Analysis of linear and generalised decision function and pattern classification techniques. Trainable pattern classifiers are treated for deterministic and statistical data sets.

Digital Signal Processing II. Lecture 3 hours; 3 credits. Prerequisite: ECE 481/581 or equivalent. Review of time domain and frequency domain analysis of discrete time signals and systems. Fast Fourier Transforms, recursive and non-recursive digital filter analysis and design, multirate signal processing, optimal linear filters, and power spectral estimation.

Fault Tolerant Computing. Lecture 3 hours; 3 credits. Prerequisites: ECE 601/501 and 651/551. Principles and techniques for parallel computer architectures. Emphasis on computer design and performance metrics for fault tolerant systems. Topics will include coding theory, computer architectures, inter-connection networks, reliability, recovery techniques, and fault detection and diagnosis.

High Performance Computer Architecture. Lecture 3 hours; 3 credits. Prerequisite: CS 665. This course focuses on computer design and analysis of high performance computer architectures. The course starts with a review of computer architecture from an analytical standpoint, considering advanced memory and pipelining design and performance. Then the majority of the course is dedicated to parallel computing, examining concurrent processors, shared memory multiprocessors, I/O and storage hierarchy, etc. The course is completed with a survey of different design tradeoffs.

Control Systems Engineering. Lecture 3 hours; 3 credits. Prerequisite: ECE 481/581 or equivalent. Course focuses on different simulation models and techniques including continuous, discrete, event simulation, discrete event simulation, and distributed simulation are considered. Modeling methodologies will be presented and analyzed, and at entry level. Applications will include military, scientific, business, manufacturing, computer performance, and other information to be classified.

Digital Control Systems. Lecture 3 hours; 3 credits. Prerequisites: ECE 543 or equivalent. This course is an introduction to control systems. Topics include transfer functions, and state space representations, stability, the root locus method, frequency response methods, and state feedback.

Multivariable Control Systems. Lecture 3 hours; 3 credits. Prerequisites: ECE 543 and 601. A comprehensive introduction to techniques applicable in control of complex systems with multiple inputs and outputs. Both the frequency domain and state variable approaches are utilized. Special topics include robust and optimal control.

Nonlinear Control Systems. Lecture 3 hours; 3 credits. Prerequisites: ECE 461/561 and 601. Introduction of basic methods for nonlinear system analysis and control, linear stability, the root locus method, frequency response methods, and state feedback.

Electrical and Computer Engineering 999. 1 credit. Semester work costrained to topics in civil, environmental, mechanical, and electrical engineering and technology. For non-engineering majors.

Electrical and Computer Engineering 999. 1 credit. A one-hour audit registration required of all graduate students maintaining a registration of 9-11 hours. Special topics course for students enrolled prior to graduation if they are not formally enrolled in course work and have not completed all academic requirements for the degree. (Refer to the policy on Graduate Student Registration Requirement for additional information.)
301. e-Engineering. Lecture 1 hour; laboratory 3 hours; 2 credits. An introduction to disciplines and applications involved in conducting physically-dispersed engineering team collaboration. Student teams will apply e-Engineering concepts learned in e-Engineering to solve an open-ended engineering scenario. Course modules include project management, virtual engineering, distributed collaboration tools, and scenario-specific engineering software.

380. Introduction to Bioelectricics. Lecture 3 hours; 3 credits. Prerequisites: MATH 212 and PHYS 232N. A one-semester course that introduces students to the applications of electricity in medicine (electrodeposition, wound healing, etc.) and topics in the application of plasmas in medicine (biological and environmental fields). (Cross-listed with ECE 380).

401. Fundamentals of Engineering Review. Lecture 1 hour; 3 credits. Junior students. This course prepares the engineering and engineering technology students for the Fundamentals of Engineering Examination.

495. Multidisciplinary Topics in Engineering and Technology, 1-3 credits. Special interdisciplinary or multidisciplinary topics of interest with emphasis on emerging areas in engineering.

601T. Engineering for Elementary/Middle School Teachers. Lecture 3 hours; 3 credits. Prerequisite: Bachelor’s degree or permission of the instructor. An introduction to civil, environmental, electrical, mechanical, and computer engineering. The course will consist of element lectures on appropriate content and concepts that directly correlate with the state and local school systems’ science and mathematics curriculum.

602T. Engineering for Secondary School Teachers. Lecture 3 hours; 3 credits. Prerequisite: Bachelor’s degree or permission of the instructor. An introduction to foundations of design and civil, environmental, electrical, mechanical, and computer engineering. The course will consist of secondary school appropriate content and concepts that directly correlate with the state and local school systems’ science and mathematics curriculum. May lead to a Project Lead the Way certification when applicable.

630. Advanced Bioelectricics. Lecture 3 hours; 3 credits. Prerequisites: ENMA 310 or permission of the instructor. A one-semester course covering advanced topics in bioelectricics. The course will cover advanced applications of pulsed power and plasma in the medical, biological, and environmental fields. (Cross-listed with ECE 630).

695. Multidisciplinary Topics in Engineering, 1-3 credits. Special interdisciplinary or multidisciplinary topics of interest with emphasis on emerging areas in engineering.

Engineering Management — ENMA

Professors R. Ural (Chair of the Department of Engineering Management and Systems Engineering), Research Professor R. R. Safford. Associate Professor C. B. Keating (Graduate Director), Assistant Professors R. Landaeta, J. H. Mun, W. R. Peterson and A. Sousa-Poza.

301. Engineering Management. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An introduction to principles of management and organizational behavior as they apply to the engineering profession. Special emphasis on project management, systems engineering and analysis, team building, quality leadership, planning, and quantitative decision making. Topic exercises, case studies, and writing assignments. Enrollment restricted to students who have declared, with the Registrar, Engineering Management as their minor, or by permission of the department.

302. Engineering Economics. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Economic analysis of projects including: cash flow analysis, value of money, cash flow analysis; cost estimates; taxes and depreciation; operations planning and control; project evaluation; accounting and budgeting tools. Prerequisite: ENMA 310 or permission of the instructor.

401. Project Management. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Foundations of engineering project management principles, techniques, and tools. Emphasis will be on project leadership, problem solving in team-based projects, project failure analysis, and advanced methods. Use of case studies to reinforce project management concepts. Students design and plan a project from concept through completion including proposal and post-project analysis.

415/515. Introduction to Systems Engineering. Lecture 3 hours; 3 credits. Prerequisite: Junior standing. Introduction to systems engineering. Examination of problem formulation, analysis, and interpretation as they apply to the study of complex systems. Emphasizes the design nature of systems engineering. Includes development of critical thinking skills, problem solving, and decision making in complex systems. Emphasis will be on systems design and analysis, including systems engineering, management, and implementation of systems management principles to engineering projects.

420/520. Statistical Concepts in Engineering Management. Lecture 3 hours; 3 credits. Prerequisite: two semester courses in calculus and probability and statistics. Emphasis on the use of statistical tools and probability with applications to engineering design, systems analysis, manufacturing, and project management. (Cross-listed with ECE 420/520).

421. Decision Techniques in Engineering. Lecture 3 hours; 3 credits. Prerequisite: junior standing. A systematic application of decision theory to engineering problems. The general theory and evaluation of alternatives, and the selection and implementation of courses of action applied to engineering design problems will be discussed. Topics include: goals and objectives; variables and relations; constraints and feasibility; uncertainty; and cost and opportunity functions. Case studies will be used to illustrate the decision process. (Cross-listed with ECE 421).

422/522. Global Engineering and Project Management. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An overview of the role of engineering and project management within the context of global competition and transnational organizations. Discussion of the various international bodies and standards impacting the practice of engineering within the US and internationally, including technical and commercial regulations. Focus will be on operating principles of transnational technical organizations, and on the planning and management of international projects. Use is made of the case study method; oral presentations and term reports are required.

430. Financial Management. Lecture 3 hours; 3 credits. Introduction to the monetary aspects of engineering projects, including accounting principles; financing, costs, pricing, cost estimation and control; inventory management; depreciation; investment decisions. Knowledge of probability and statistics (ENMA 420/520 or equivalent) is assumed. Case studies and a term project are required.

450. Analysis of Organizational Systems. Lecture 3 hours; 3 credits. Introduction to the role and nature of organizations in the context of systems thinking. Emphasis will be on fundamental concepts in the analysis of organizations. A systems approach is taken in the examination of social systems and the education program that are of consequence to technical professionals and managers. Modules covered include: History and Systems of Organizations and Management; Basic Organizational Systems and Models emphasizing rational, natural and open systems; Organizational Behavior Models; Organizational Structure Models; Integration of Systems Perspectives.

602. Organizational Systems Management. Lecture 3 hours; 3 credits. This course introduces concepts of organizational management and leadership, which are approached from a systems and complex systems perspective to explain the behavior of systems. Focus and content will include organizational behavior, transformation, and organizational environments. Models will be drawn from a variety of areas including Management, Finance, Accounting, International, Political, Social, and Strategic Operational Management.

603. Operations Research. Lecture 3 hours; 3 credits. Decision models and management science. Topics include: optimization methods; linear and other programming models; network analysis; inventory analysis; queuing theory; reliability and simulation; and probability and statistics (ENMA 420/520 or equivalent) is assumed.

605. Project Management. Lecture 3 hours; 3 credits. Explorations of the systems approach to planning, scheduling, control, design, evaluation, and leadership of projects in technology-based organizations. The fundamental tools and techniques of managing the role of the project manager; project management systems; project selection; project life cycle; project monitoring and control; project management; project risk and failure analysis; contextual nature of project management; and probabilistic project management. Prerequisite: ENMA 400/500.

607. Stochastic Decision Methods. Lecture 3 hours; 3 credits. This course examines the role and nature of systems engineering and management in complex systems. It provides fundamental understanding of systems engineering, including systems integration, processes, procedures, tools, and operating environments. Topics include system development life cycle, risk management, configuration management, quality management, maintenance management, software engineering, and data management. (Cross-listed with ECE 607).

611. Systems Engineering III. Lecture 3 hours; 3 credits. Prerequisite: ENMA 400 and 420/520. This course covers the systems engineering and management and integration in the development of complex systems. Topics include system architecture development, requirements analysis, and decision making, system design, models, and simulation; project decision analysis, integrated schedule management and analysis, ensuring the system is designed, developed and implemented in accordance with the baseline, systems integration, verification and validation.

613. Logistics and Supply Chain Management. Lecture 3 hours; 3 credits. Prerequisite: ENMA 400. This course covers the analysis of design and management of the supply chain for corporate, business and industrial organizations. Topics include strategic planning, facility location and analysis, distribution and transportation networks, forecasting, inventory management, and information systems for supply chains. Knowledge of probability and statistics (ENMA 420/520 or equivalent) is assumed.

640. Integrated Systems Engineering I. Lecture 3 hours; 3 credits. This course examines the role and nature of systems engineering and management in complex systems. It provides fundamental understanding of systems engineering, including systems integration, processes, procedures, tools, and operating environments. Topics include system development life cycle, risk management, configuration management, quality management, maintenance management, software engineering, and data management. (Cross-listed with ECE 607).

641. Integrated Systems Engineering II. Lecture 3 hours; 3 credits. Prerequisite: ENMA 640. This course provides the student with the knowledge of systems engineering and integration in the development of complex systems. Topics include system architecture development, requirements analysis and decision making, system design, models and simulation; project decision analysis, integrated schedule management and analysis, ensuring the system is designed, developed and implemented in accordance with the baseline, systems integration, verification and validation.

667. Cooperative Education. 1-3 credits. Available for regularly enrolled students and participants for credit based on academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education program director. Individual study selected by the student. Supervised and approved by a faculty member with the approval of the graduate program director.

699. Thesis. 1-6 credits. Prerequisite: ENMA 721 and permission of the graduate program director. Research leading to Master of Science degree. Thesis directed by a member of the graduate faculty. The student will work under the direct supervision of a faculty member. A written thesis is required. The thesis must be approved by a faculty committee and the graduate program director. The thesis must be accepted by the Graduate Committee of the college. The thesis must be approved by the graduate program director.

700/800. Economic Analysis of Capital Projects. Lecture 3 hours; 3 credits. Prerequisite: ENMA 600 or equivalent. This course is an advanced treatment of economic analysis of capital projects. It is targeted to engineers who actively participate in the capital budgeting process and project justification. Topics include capital budgeting techniques (including multi-attribute decision making), utility theory, justification of new technologies, and current research in the field. The emphasis of the course is on the application of current research in the field is stressed. Case studies are used. Oral presentations and term project required.

701. Analysis of Organizational Systems. Lecture 3 hours; 3 credits. Prerequisite: permission of graduate program director. Individual study selected by the student. Supervised and approved by a faculty member with the approval of the graduate program director.

703/803. Applied Optimization in Engineering
Management. Lecture 3 hours; 3 credits. Prerequisite: ENMA 603. Focuses on decision-making and optimization problems in engineering management applications. Optimization methods include Genetic Algorithms, Simulated Annealing, Tabu Search, Constraint Programming, Intelligent Agents, and Construction techniques involving computer-aided design, quality control, operation, analysis, and evaluation of project management systems; examination of project failure modes and project management system design alternatives; intervention and modeling of project systems; project-based organizations; strategic project integration; critical appraisal of the current state of project management knowledge and research directions.

710/814. Crisis Project Management. Lecture 3 hours; 3 credits. This course is designed to provide an understanding of the interdisciplinary aspects of systems development, operation, and support. The course focuses on the application of scientific and engineering efforts to better control and manage the need for, the definition system configuration through the interactive process of design, test, and evaluation.

717/817. Research Project Planning. Lecture 3 hours; 3 credits. Introduction to parametric cost modeling techniques and methodologies; generation and application of statistical relationships for cost estimation; the factors affecting costs from various attributes of complex systems; sources of supporting data; function deployment; technology forecasting. Special emphasis is placed on the determination of cost, cost control, and cost design optimization on cost bases. Case studies and a terminal project are required.

721/821. Research Methods in Engineering Management. Lecture 3 hours; 3 credits. The course is intended to prepare students to undertake substantial, rigorous, and original research projects and dissertations. The course will focus on the approaches necessary to integrate research intent, methodologies, techniques, and results. A variety of research methodologies will be investigated. Emphasis on problem formulation, literature review, proposal preparation, oral presentation, data analysis, experimentation and accepted canons of research. Knowledge of probability and statistics (ENMA 420/520 or equivalent) is assumed. Research paper required.

723/823. Enterprise System Dynamics. Lecture 3 hours; 3 credits. The use of system dynamics modeling and simulation tools in the analysis and understanding of large-scale enterprise application areas. Topics include system dynamics perspective and process, tools for systems thinking, the dynamics of growth, tools for modeling of enterprise systems, model instability and oscillation, and model testing.

724/824. Risk Analysis. Lecture 3 hours; 3 credits. Approaches to the determination of risk -- risk modeling methods, risk assessment methods, risk management tools; application of statistical and hazards theoretical methodologies, risk modeling techniques, and risk analysis methodologies to applications to project management, scheduling, and cost estimation.

728/828. Sociotechnical Systems Design. Lecture 3 hours; 3 credits. Prerequisite: ENMA 601. An examination of organizations as sociotechnical systems, including sociotechnical approaches to design and management. Principles of participative design and decision making; quality of work life; semi-autonomous work groups; organizational ecology; cooperation; quality assurance; application to planning.

743/843. Reliability and Maintainability. Lecture 3 hours. 3 credits. Focuses on the theory and practice of reliability engineering, maintainability and availability. Reliability evaluation models and techniques; failure data collection and analysis; reliability testing and modeling; operational systems; mechanical system reliability. Semester project. Knowledge of probability and statistics (ENMA 420 or equivalent) is assumed.

750/850. Systems of Systems Design. Lecture 3 hours; 3 credits. Prerequisite: ENMA 641. Requirements capture and analysis; architecture capture and analysis; requirements management systems; software for requirements capture and control, configuration management of requirements baselines. A project is required.

751/851. Systems of Systems Integration. Lecture 3 hours; 3 credits. Prerequisite: ENMA 641. Baseline control during integration verification and validation. Topics include scheduling, baseline control, integration testing prior to delivery, verification testing, validation testing, final delivery report. A written report is required.

763/863. Robust Engineering Design. Lecture 3 hours; 3 credits. Robust design approach based on “Taguchi Methods.” Robust design and applied design-of-experiments methods; full factorial and fractional factorial designs; response surface methods. The course is designed to provide students with an opportunity to apply concepts and tools across disciplines to recognize potential applications, formulate problems, plan experiments, and analyze data. Knowledge of probability and statistics (ENMA 420/520 or equivalent) is assumed. Case studies. Semester project.

775/895, 796/896. Topics in Engineering Management. Lecture 3 hours. 3 credits. Special topics of interest with emphasis placed on recent developments in engineering management.

160. Independent Study in Engineering Management. 1-3 credits. Prerequisite: permission of the instructor and graduate program director. Designed for advanced individual study into an engineering management topic area. Independent study projects will be related to engineering management and completed under the supervision of a certified faculty mentor.

888. Ph.D. Seminar. 2 hours per week; 1 credit. Discussion of research projects, topics, and problems of Engineering Management faculty, researchers, and students. A weekly exchange of ideas and issues between faculty and Ph.D. students focused on doctoral research.

896. Research in Engineering Management. 1-12 credits. Prerequisite: permission of the instructor and graduate program director. Supervised research prior to passing Ph.D. candidacy exam. 1 credit. Prerequisites: ENMA 821 and permission of instructor.

999. Engineering Management 999. 1 credit. Audit only. Course is intended to prepare engineering management students to maintain active status during the final semester prior to graduation. If they are not formally enrolled, they will not complete all academic requirements for the degree. (Refer to the policy on Graduate Student Registration Requirement for additional information.)

1141. Lecture 3 hours; 3 credits. Special topics in surveying for civil engineering students and professional engineers. Not open to Civil Engineering Technology majors.

302. Program Introduction. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M. This course covers the numerical and statistical analysis of system of spatial measurements, formation and solution of simultaneous observation equations, propagation of errors, adjustment of least squares, weight and precision of adjusted quantities, error ellipses and applications to surveying, geodesy and photogrammetry problems.

304. Soils and Foundations. Lecture 3 hours; 3 credits. Prerequisite: CET 220. A study of the properties of soil including stress, shear strength, and bearing capacity of foundations. Foundation design and settlement of structures and the design of shallow and deep foundations are also covered.

340. Materials Testing Laboratory. Lecture 3 hours; 1 credit. Prerequisite: CET 220. Pre- or corequisite: CET 340. Course includes standard methods for inspecting, sampling, testing, and evaluating soils. Students use typical field test equipment and perform tests on samples of local soils. A written report is required for each experiment.

345. Materials Testing Laboratory. Lecture 3 hours; 1 credit. Prerequisite: CET 220. A study of the properties of soil including stress, shear strength, and bearing capacity of foundations. Foundation design and settlement of structures are also covered.

367. Cooperative Education, 1-3 credits (may be repeated for credit). Prerequisite: approval for the department and Career Management. Credit during the Fall of the senior year in association with the policy for granting credit for Cooperative Education program. Credit for pass/fail grading only. Student participation for credit is determined by the relevance of the work experience, criteria, and evaluative procedures as formalized by the department and Career Management prior to the semester in which the work experience is to take place. (Offered fall, spring, summer) (quadrimester registration)

368. Internship, 1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Qualifies as a practicum experience. (requires additional registration with department and Career Management in accordance with the policy on Graduate Student Registration Requirement for additional information.)

389. Practicum, 1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Qualifies as a practicum experience.

400. Computer Aided Design. Laboratory 2 hours; 1 credit. Prerequisite: CET 301. The use of computer-aided drafting in assembling a set of plans and specifications and in the construction industry. The use of computer-aided drafting in assembling a set of plans and specifications. (Requires additional registration with department and Career Management in accordance with the policy on Graduate Student Registration Requirement for additional information.)

411. Photogrammetry. Lecture 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M or equivalent. This course covers the numerical and statistical analysis of system of spatial measurements, formation and solution of simultaneous observation equations, propagation of errors, adjustment of least squares, weight and precision of adjusted quantities, error ellipses and applications to surveying, geodesy and photogrammetry problems. A written report is required for each experiment.

420. Computer Aided Drafting. Lecture 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M or equivalent. This course covers the numerical and statistical analysis of system of spatial measurements, formation and solution of simultaneous observation equations, propagation of error
495/496. Topics in Civil Engineering Technology. 1-3 credits each semester.

Electrical Engineering Technology — EET

For schedule of offerings see http://www.et.edu.edu/ eetschedule.pdf.

110. Electrical Circuits I. Lecture 3 hours; 3 credits. Prerequisites: MATH 162M. Fundamentals of electrical circuits including basic electrical parameters and variables, circuit laws and theorems, node analysis, Thewerian's and Norton's Theorems, capacitance, inductance, magnetism, and elementary RC and RL transients.

120. Logic Circuits and Microprocessors. Lecture 3 hours; 3 credits. Prerequisites: MATH 162M. Logic circuits and microprocessors. Boolean algebra, digital devices, and microprocessor fundamentals.

200. Electrical Circuits II. Lecture 3 hours; 3 credits. Prerequisites: EET 110 and MATH 163. A continuation of EET 110 with emphasis on steady-state ac circuit analysis and applications. Topics include alternating current and voltage, phasors and complex numbers and their applications in circuit analysis, series and parallel resonance, complex power, and polyphase circuits.

250. Circuits Laboratory. Lecture 1 hour; laboratory 3 hours: 2 credits. Pre- or corequisite: EET 200. Electrical laboratory instruction including test equipment, measurement of current, voltage, power, and phase angles, and the use of circuit analyzers. Use also covers digital image enhancement, image correlation, feature extraction and orthophotography.

242. Remote Sensing. Lecture 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M or equivalent. This course covers the fundamentals of remote sensing, principles, satellite technology. To state stormwater regulations and the Chesapeake Bay pipe flow, stormwater management, and issues pertinent to site engineering are examined. The principles of siting and scheduling software are emphasized.

300. Fundamentals of Electrical Technology. Lecture 3 hours; 3 credits. Pre- or corequisite: MATH 211. A laboratory course in basic electrical technology and computer programming. Not open to electrical engineering technology majors.

305. Electrical Power and Machinery. Lecture 3 hours; 3 credits. Pre- or corequisite: EET 205. A study of AC and DC and AC motors and generators, transformers, power distribution systems, and instrumentation.

320. Digital Electronics. Lecture 3 hours; 3 credits. Prerequisites: EET 205 or 355; Pre- or corequisite: EET 360. A laboratory course dealing with electronic circuits and subsystems with primary emphasis on circuit components and modules. Electric circuit techniques, instrumentation and error analysis. Modeling of complex electronic circuits on the computer with frequency response, simulation and testing.

420. Remote Sensing. Lecture 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M or equivalent. A course that covers image data merger with GIS. A brief historical review of the electromagnetic spectrum, photoelectric conversion, image processing, and ground coordinate systems, coordinate transformations and refinement, rotation matrices, collinearity and coplanarity constraints, analytical space resection, space intersection, trip and block formation and adjustment. It also covers digital image enhancement, image correlation, feature extraction and orthophotography.

495/496. Topics in Civil Engineering Technology. 1-3 credits each semester.

Electrical Engineering Technology — EET

For schedule of offerings see http://www.et.edu.edu/ eetschedule.pdf.

110. Electrical Circuits I. Lecture 3 hours; 3 credits. Prerequisites: MATH 162M. Fundamentals of electrical circuits including basic electrical parameters and variables, circuit laws and theorems, node analysis, Thewerian's and Norton's Theorems, capacitance, inductance, magnetism, and elementary RC and RL transients.

120. Logic Circuits and Microprocessors. Lecture 3 hours; 3 credits. Prerequisites: MATH 162M. Logic circuits and microprocessors. Boolean algebra, digital devices, and microprocessor fundamentals.

200. Electrical Circuits II. Lecture 3 hours; 3 credits. Prerequisites: EET 110 and MATH 163. A continuation of EET 110 with emphasis on steady-state ac circuit analysis and applications. Topics include alternating current and voltage, phasors and complex numbers and their applications in circuit analysis, series and parallel resonance, complex power, and polyphase circuits.

250. Circuits Laboratory. Lecture 1 hour; laboratory 3 hours: 2 credits. Pre- or corequisite: EET 200. Electrical laboratory instruction including test equipment, measurement of current, voltage, power, and phase angles, and the use of circuit analyzers. Use also covers digital image enhancement, image correlation, feature extraction and orthophotography.

242. Remote Sensing. Lecture 3 hours; 3 credits. Prerequisites: CET 305 and MATH 102M or equivalent. This course covers the fundamentals of remote sensing, principles, satellite technology. To state stormwater regulations and the Chesapeake Bay pipe flow, stormwater management, and issues pertinent to site engineering are examined. The principles of siting and scheduling software are emphasized.

300. Fundamentals of Electrical Technology. Lecture 3 hours; 3 credits. Pre- or corequisite: MATH 211. A laboratory course in basic electrical technology and computer programming. Not open to electrical engineering technology majors.

305. Electrical Power and Machinery. Lecture 3 hours; 3 credits. Pre- or corequisite: EET 205. A study of AC and DC and AC motors and generators, transformers, power distribution systems, and instrumentation.

320. Digital Electronics. Lecture 3 hours; 3 credits. Prerequisites: EET 205 or 355; Pre- or corequisite: EET 360. A laboratory course dealing with electronic circuits and subsystems with primary emphasis on circuit components and modules. Electric circuit techniques, instrumentation and error analysis. Modeling of complex electronic circuits on the computer with frequency response, simulation and testing.
controller setup and programming techniques with emphasis on practical applications. Computer assignments include ladder logic programming and microcomputer interfacing.

420. Advanced Logic Design. Lecture 3 hours; 3 credits. Prerequisite: EET 310. Advanced digital logic design and circuit reduction techniques. Topics include Boolean algebra, combinational and sequential logic design, computer-aided design, numerical methods, and computer programming. Applications include digital system simulation and testing.

430. Automatic Control Systems. Lecture 2 hours; laboratory 2 hours; 3 credits. A study of dynamic control systems, including feedback control, stability, and state variables. Emphasis will be on computer-aided design techniques. Applications include process control, power systems, and transportation systems.

450. Digital Control Systems. Lecture 3 hours; 3 credits. Prerequisites: EET 305, 320, 325, 330. A study of modern digital control systems including the sampling process of linear systems, modeling of discrete systems, z-transforms, analysis of discrete systems, signal conversion, the digital computer as a controller, feedback and cascade compensation, and hardware and software for digital control systems.

460. Modern Communication Systems. Lecture 3 hours; 3 credits. Prerequisite: EET 410. Overview of the principles of satellite communications, television systems, fiber optics, antennas and other relevant topics.

470. Microprocessor Design. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: EET 340. Methods for generating, transmitting, and detecting signals, including digital, analog, and hybrid systems. Emphasis on microcomputer-based systems.

475. Microwave Measurements. Lecture 3 hours; 3 credits. Prerequisite: EET 340. Techniques for microwave measurements including bridges, slotted lines, spectrum analyzers, and network analyzers. Laboratory will emphasize high frequency and microwave measurements using bridges, slotted lines, spectrum analyzers and network analyzers.

360. Design of Machine Elements. Lecture 3 hours; 3 credits. Prerequisite: CET 220. A rapid review of the fundamental principles of strength of materials and working stress followed by practical analyses of fundamental machine elements such as shafts, spindles, and screws.

361. Fluid Mechanics. Lecture 3 hours; 3 credits. Prerequisites: MATH 211 and CET 200. The study of fluid statics and dynamics, including momentum, energy, Bernoulli's equation, and the behavior of simple fluid flows. Emphasis on applications to fluid systems.

385. Fluid Mechanics Laboratory. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: MATH 211. Laboratory course dealing with the verification of fluid equations and principles and the characteristics of fluid machinery with emphasis on mechanical energy conversion. Development of presentation and interpretation of experimental data.

390. Thermal Applications. Lecture 3 hours; 3 credits. Prerequisites: CET 220 and 386. A study of thermodynamics. Topics include the basic steam and gas turbine power plant, introduction to refrigeration systems, psychrometrics, basic combustion, and convection heat transfer including heat exchangers and surveys of other energy conversion systems.

391. Dimensioning and Tolerancing. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: MET 100. Rules and methods of dimensioning and tolerancing. Calculated tolerances using ANSI-Y14.5M, tolerances of form, orientation, and profile, including flatness, straightness, circularity, cylindricity, angularity, etc. Lab work consists of designing and setting up tolerancing drawings.

450. Energy Systems. Lecture 3 hours; 3 credits. Prerequisite: MET 350. A study of the application of thermodynamics to energy conversion systems including fossil fuel power plants, nuclear power and other energy conversion systems. Students are required to collect data and synthesize a mechanical design. Submission of written reports and a final oral presentation are required. (qualifies as a CAP experience)

455. Senior Design Project. Lecture 1 hour; laboratory 6 hours; 3 credits. Prerequisites: senior standing and faculty approval. Individual projects performed under the direction of a sponsoring faculty member. Projects may involve analytical, design, construction, or experimental work.

440. Heat Transfer. Lecture 3 hours; 3 credits. Prerequisites: CET 220. A study of heat transfer, including conduction, convection, and radiation heat transfer and heat exchangers. Emphasis is on applications and problem solving using current techniques, and modern software and mathematical models are introduced.

471. Nuclear Systems I. Lecture 3 hours; 3 credit. Prerequisite: MET 370. A study of the application of nuclear physics to power reactor design and operation. Includes an introduction to the nuclear fuel cycle, reactor core design, and reactor core physics. Topics include principles as applied to the design and operation of various types of commercial nuclear power reactors. Topics include sources of radiation, radiation dosimetry, and reactor physics. Additional emphasis is given to the safe and economic operation of power reactors. This course satisfies the introductory physics course requirement for nuclear engineering majors.
English — ENGL


SUMMARY OF COURSE OFFERINGS

I. Composition and Professional Writing


II. Creative Writing


III. Language Studies and Linguistics


IV. Journalism


V. Literature and Film


VI. Teaching

Undergraduate: 455. Graduate: 555, 664, 687.

VII. Non-Lecture Courses


VIII. Topics Courses

Undergraduate: 395, 396, 495, 496. Graduate: 595, 596, 695.

COURSE DESCRIPTIONS

110C. English Composition. Lecture and discussion 3 hours; 3 credits. Prerequisite: Students must have passed the University Writing Sample Placement Test before registering for 110C; the test is administered by the University Testing Center. This course is designed to improve students' writing skills. Emphasis is placed on developing students' proficiency in prewriting and observation, 333, as thinking, ordering and imagining, and on practicing the principles of expository writing. Individual conferences are required.

111C. English Composition. Lecture and discussion 3 hours; 3 credits. Prerequisite: ENG 110C. This course continues developing the methods of composition begun in ENG 110C. Primary emphasis is on principles of argumentative, analytical, and critical writing. Included are report, precise, and thesis writing. The use and adaptation of sources in research writing, in a fully developed research paper. Some writing will be in

112L. Introduction to Literature. Lecture 3 hours; 3 credits. Prerequisite: None. This course is designed for first-year students who now understand the distinctive forms and meanings of poems, plays and fiction, and key notions such as character, plot, and theme. Reading includes works by Shakespeare, Dickens, Tolstoy, and Faulkner. Students will be familiar with film techniques, so they study eight to ten films. Prerequisite: ENG 110C or 111C.

126C. English Composition. Lecture 3 hours; 3 credits. Prerequisite: ENG 110C or 111C. This course introduces students to the nature of rhetoric and its contribution to the knowledge-making enterprises of English studies and other disciplines. Students will learn to assess the effectiveness of their own language practices.

127C. Honors: English Composition. Lecture 3 hours; 3 credits. Prerequisite: 6-hour General Education composition requirement. This course introduces students to the nature of rhetoric and its contribution to the knowledge-making enterprises of English studies and other disciplines. Students will learn to assess the effectiveness of their own language practices.

237W. Advanced Composition. Lecture 3 hours; 3 credits. Prerequisite: English Composition 127C or English Composition 126C and 6-hour General Education composition requirement. This course emphasizes development of a mature, professional style in expository writing by study of the rhetorical and analytical principles underlying effective prose writing.

333. The Interpretation of Literary Works. Lecture 3 hours; 3 credits. Prerequisite: 6-hour General Education composition requirement. This course introduces students to theories about the nature and value of literature and gives them experience in applying such theories to specific literary texts.

334W. Technical Writing. Lecture 3 hours; 3 credits. Prerequisite: 6-hour General Education composition requirement. This course provides the student with a working knowledge of various types of technical communication, including the writing of proposals, instructions, and reports for both the specialist and the nonspecialist.

335. Editing and Document Design. Lecture/lab 3 hours; 3 credits. Prerequisites: six hours in English to include ENG 110C and English composition or related composition experience in copy editing and includes an analysis of technical formats used in journalism, business, industry, and government. Students will work in documents, presentation, page layout, and design.

336. The Short Story. Lecture 3 hours. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. This course focuses upon the art of the short story. Students will explore how the writers' careful selection of detail creates meanings that emerge through the plot, setting, action, point of view, and other elements of fiction.

337. Twentieth-Century British Literature. Lecture 3 hours; 3 credits. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. A study of American drama from its beginnings to the present day. The course includes plays from the eighteenth and nineteenth centuries, with a generous selection from the twentieth century.

342. Southern Literature. Lecture 3 hours; 3 credits. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. A survey of the literature of the American South from William Byrd to Ernest Gaines. Selected works and related secondary materials examine regional, national, and world expressions of evolving regional attitudes to be evaluated in terms of the mainstream of American culture.

345. American Literature to 1860. Lecture 3 hours; 3 credits. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. A study of American literature from the beginning to the Civil War. Among the authors studied are Franklin, Bryant, Poe, Hawthorne, Emerson, Thoreau, and Melville.

346. American Literature Since 1860. Lecture 3 hours; 3 credits. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. A study of American literature from the beginning to the Civil War. Among the authors studied are Franklin, Bryant, Poe, Hawthorne, Emerson, Thoreau, and Melville.

349. The Contemporary American Novel. Lecture 3 hours; 3 credits. Prerequisites: literature perspective requirement and 6-hour General Education composition requirement or permission of the instructor. A study of American novels published since 1945. Emphasis is on contemporary and experimental techniques.

350. Aspects of the English Language. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An introduction to aspects of the English language and linguistics. Special emphasis on modern linguistic techniques. Primary focus is placed on intensive English sentence analysis, which involves a comprehensive study of the components of the English sentence structure, and of various sentence types in English.

351. Fiction Workshop. Lecture 3 hours; 3 credits. Prerequisites: English Composition 127C or English Composition 126C and permission of the instructor, based on writing samples submitted. Students write, criticize, discuss, and revise works of fiction.
An introduction to selected major works of literature in General Education composition requirement, and three with emphasis on recent developments. The course provides an overview of various aspects of study of language, including phonology, morphology and syntax. Topics include language variation (within and across communities), and other languages to English, the relationship of linguistics to literature, the development of effective writing styles, and sociolinguistic theory. This course is part of the World Cultures cluster. In this course, we will study the geographical, social, and stylistic diversity of English spoken in the United States. We will also investigate how perception of dialect diversity affects access to education and other socioeconomic opportunities.

451/551. Advanced Fiction Workshop. Lecture 3 hours; 3 credits. Prerequisite: ENGL 353 or permission of instructor. A study of the major themes and techniques of the contemporary novel with emphasis on the continued need for the free flow of information in the democratic process.

452/552. Origins and Early Development of the British Novel, Lecture 3 hours; 3 credits. Prerequisite: ENGL 353 or permission of instructor. A study of early novels and how the novel developed from the traditions such as epic, romance, criminal biography, and travel narrative.

453/553. Victorian Literature. Lecture 3 hours; 3 credits. Prerequisite: one 300-level literature course or permission of instructor. This course provides an overview of 19th-century British novels in context of the economic, social, and political issues of the period, emphasizing their formal and aesthetic concerns.

458/558. The Twentieth-Century British Novel. Lecture 3 hours; 3 credits. Prerequisite: one 300-level literature course or permission of instructor. Offered in specific sections of 1900-1945, 1945-present, 1900-present. Major British novels are studied.

463W/563W. Writing in Electronic Environments. Lecture 3 hours; 3 credits. Prerequisites: ENGL 325 and computer literacy or permission of instructor. This course offers a comprehensive view of the field of electronic writing environments, especially emphasizing Web-based compositions. Readings and discussions provide an history of electronic writing, the writing process. Students should expect a variety of Web sites and a theoretical discourse around the sites they are building.

464/564. History of the English Language. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three hours of social science, or permission of the instructor. A study of the development of the English language, Primary focus is on the internal history, emphasizing the continuity and change in successive stages of the language.

465/565. Studies in American Drama. Lecture 3 hours; 3 credits. Prerequisite: 300-level literature course, ENGL 340 preferred. With rotating topics, this course pursues particular themes or periods in American drama and theater. Potential areas of inquiry might include melodrama, the early transatlantic stage, rise of stage realism, age of O'Neill, or the contemporary drama.

474/574. The American Novel to 1920. Lecture 3 hours; 3 credits. Prerequisite: one 300-level literature course, ENGL 346 preferred. Examination of the American novel from its origins in the late eighteenth century through World War I. The course will emphasize the historical, cultural trends during the period, and such relevant literary modes as romanticism, realism, and naturalism.

475/575. The American Novel since 1920 to Present. Lecture 3 hours; 3 credits. Prerequisite: one 300-level literature course, ENGL 346 preferred. Examination of the American novel from the end of World War I to the present day. This course will emphasize formal issues related to the genre of the novel and relevant literary and cultural trends during the period including modernism and postmodernism.

450/550. American English. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course focuses on writing as a means of making and personal settings.

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review plays, screenplays, or television scripts. Students will write short stories, novels, poetry, and creative nonfiction focusing on the social, historical, and ideological contexts of their writing, as well as the various forms of literature, including periodical journalism, 'picturesque' poetry, and the novel interacted with the growth of distinctly modern institutions and philosophies such as a free, commercial press, market capitalism, colonialism, political radicalism, and industrialism.

461. Nineteenth-Century British Literature. Lecture 3 hours; 3 credits. A study of a selection of the literature written in Britain during the romantic and Victorian ages, focusing on the social, historical, and ideological contexts informing its production. Texts analyzed include poetry, fiction, and nonfiction.

465. Twentieth-Century British Literature. Lecture 3 hours; 3 credits. Students will read major works by poets and prose writers. Some attention will be given to the movements, trends, forces, and ideas of the period.

470. Colonial Literature. Lecture 3 hours; 3 credits. An introduction to the discourse of anti-colonial critical theory through the literature produced in countries outside of Europe.

460. American Literature 1810-1845. Lecture 3 hours; 3 credits. Intensive study of a variety of texts from several genres reflecting the historical forces, aesthetic movements, social trends, and representative works of the period.

484. Feature Story Writing. Lecture 3 hours; 3 credits. A study of the techniques involved in writing a variety of newspaper and magazine feature stories. Students will write articles covering news stories, business, trends, and issues. Assistance is given in the marketing of manuscripts.

486/586. Media Law and Ethics. Lecture 3 hours; 3 credits. Examination of a theme, genre, or other literary topic as it appears in the literature of several countries. All works are assigned in English translation if not originally written in English. Specific topics are listed in the schedule booklet, and course descriptions appear in a booklet distributed to all academic advisors.

487. Topics in World Literature. Lecture 3 hours; 3 credits. Study of a selection of works from a variety of cultures.

492/592. Modern World Drama. Lecture 3 hours; 3 credits. Intensive study of a variety of texts from several genres reflecting the historical forces, aesthetic movements, social trends, and representative works of the period.

495/595, 496/596. Topics in English. Lecture 3 hours; 3 credits. Intensive study of a variety of texts from several genres reflecting the historical forces, aesthetic movements, social trends, and representative works of the period.

496. Craft of Poetry. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. A detailed study of the techniques of poetry with emphasis on form, imagery, rhythm, and symbolism. Especially designed for, but not limited to, creative writing students; supplements the creative writing workshops.
as specifPc descriptions of the courses are available prior to the publication of the catalog or course schedule and will be more fully described in information released by the college or department. Specific descriptions of the courses are available prior to the publication of the catalog or course schedule and will be more fully described in information released by the college or department.

Environmental Health—ENVH

695. Topics. Lecture 3 hours; 3 credits. Prerequisite: graduate standing. A study of the vectors of human disease and the methods utilized in their control. (offered spring)

698-699. Thesis. Lecture 3 hours; 3 credits. Prerequisite: junior standing. A study of the vectors of human disease and the methods utilized in their control. (offered spring)

407/507. Occupational Safety Standards, Laws and Regulations. Lecture 3 hours; 2 credits. Prerequisite: ENVH 441/541 or permission of the instructor. Use and application of sampling and analytical equipment for measurement of parameters in the environment, including techniques of media selection, sample preparation and analysis.

448/548. Epidemiology and Biostatistics. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An introductory course on the fundamentals of epidemiology, including methods of data collection and analysis of human populations. Emphasis is on the application of statistical and mathematical design and analysis of health research studies for the understanding and control of population health and disease with emphasis on environmental applications.

451/541. Industrial Hygiene. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An in-depth study of the chemical and physical agents responsible for occupational injury and the methods used for their measurement, evaluation and control.

452/542. Sampling and Analysis Laboratory. Lecture 4 hours; 2 credits. Prerequisite: ENVH 441/541 or permission of the instructor. Use and application of sampling and analytical equipment for measurement of parameters in the environment, including techniques of media selection, sample preparation and analysis.

445/545. Air Pollution and Its Control. Lecture 3 hours; 3 credits. Prerequisite: junior standing. The course includes the study of the air pollution in relation to air quality criteria, pollutant production, atmospheric evolution, measurement and control techniques.

446/546. Physical Hazards Laboratory. Laboratory 4 hours; 2 credits. Prerequisite: ENVH 441/541 or permission of the instructor. Use and application of sampling and analytical equipment for measurement of physical hazards in the work environment. Includes aspects such as ergonomics, noise, and vibration.


502/502. Environmental Health Administration and Law. Lecture 3 hours; 3 credits. Prerequisite: junior standing. A review of the concepts and practice of administering environmental health programs. Emphasis is on the federal, state and local level. The principles of administration and leadership of programs in the private sector are included. The course emphasizes the importance of political and administrative law bases for organizing and conducting such programs and developing environmental policy as well as the technical aspects of the field.

504/504. Environmental Health Internship I, II. 3 credits each; both required. Prerequisites: ENVH 301W and permission of program director. Includes placement in a health-related field or in a fully supervised setting, prepared in accordance with faculty advisor. (qualifies as a CAP experience)

405. Environmental Health Internship III. 6 credits. Prerequisites: junior standing, completion of ENVH 441/541 or permission of program director. Includes placement in a health-related field or in a fully supervised setting, prepared in accordance with faculty advisor. (qualifies as a CAP experience)
Lifeline Sports Program

1. Aquatic Activities — PE

101. Swim Conditioning. Three classes per week; 7 1/2 weeks; 1 credit. Students will discuss and learn the training process including advantages and benefits of swimming, principles of training, evaluation and motivation, and minor annoyances. Stroke mechanics and improvement for triathletes.

102. Lifeguard Training. Three classes per week; 7 1/2 weeks; 1 credit. Development of the basic water safety skills and knowledge to make one reasonably safe in the water. Red Cross certification.

105. Water Safety Instructor. 3 credits. Prerequisite: must be at least 17, in sound physical condition, and have the ability to perform skills in the level VI ARC swin course. This course is designed to provide the student with knowledge and skills in water safety and teaching techniques for certification to teach swimming, lifesaving, rescue and water safety courses. Red Cross Water Safety Instructor certification is required.

107. Beginning SCUBA. Three classes per week; 7 1/2 weeks; 1 credit. Development of the basic skills and knowledge of skin and SCUBA diving. NAUI certification issued upon completion of PE 108+. Several open-water dives are required. Students must furnish their own equipment and pay for air used.

108. Intermediate SCUBA. Three classes per week; 7 1/2 weeks; 1 credit. Completion of the beginning SCUBA course. Development of intermediate SCUBA skills. NAUI certification issued upon completion of PE 108+. Several open-water dives are required. Students must furnish their own equipment and pay for air used.

113. Scuba Assistant Instruction. 2 credits. Prerequisite: NAUI certified scuba diver. Covers in depth development of skills necessary to pass the tests in fundamental water skills and basic diving instruction necessary to authoritatively assist scuba instructors in the conduct of diving training.

114. Beginning Sailing. Three classes per week; 7 1/2 weeks; 1 credit. Development of basic sailmanship and sailing techniques. Additional fees are required. Sailing competency required.

226. Advanced SCUBA. Three classes per week; 2 credits. Prerequisites: SKILL 107+ and 108+ or permission of the instructor. NAUI Advanced Diver certification issued. Development of advanced SCUBA skills. Open water training with the emphasis on leadership training necessary for assisting the instruction of group dives. Students must furnish their own equipment and air.

228. Advanced SCUBA. Three classes per week; 3 hours per week for 5 1/2 weeks; 3 hours per week for 5 1/2 weeks; laboratory 3 hours; 3 credits. Prerequisites: NAUI assistant instructor or equivalent; one year and 24 hours of open water training beyond beginning SCUBA. Development and permission of the instructor. NAUI instructor certification issued. Practice teaching of beginning SCUBA course required. Students must furnish their own equipment and air.

4. Individual Activities — PE

112. Yoga. 2 credits. This course provides a foundation for the understanding and practice of Hatha yoga in its complete form. Course covers yoga postures, breathing exercises, philosophy, and meditation.

115. Introduction to Rock Climbing. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed to prepare students for basic rock climbing. Course skills will include knots, climbing skills, equipment required, and safety knowledge. Course includes one climbing field trip.

117. Disabled and Fit. 1 credit. 3 hours per week for 7 1/2 weeks; 2 credits; 3 hours per week for 7 1/2 weeks; 1 credit. Developed for students with a physical disability who wish to participate in an individually designed fitness program.

118. Swimming — Weight Training. Three classes per week; 7 1/2 weeks; 1 credit. Designed to allow students an individualized weight training program. The program will include use of free weights, machines, and appropriate tools for the variety of weight training differences.

119. Aerobics/Jogging. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed for utilizing oxygen over prolonged periods of time (e.g., jogging). Individualized programs presented.

121. Individual Projects. Three classes per week; 7 1/2 weeks; 1 credit. Development of all the strokes to enable an individual to play a good game of badminton.

122. Intermediate Tennis. Three classes per week; 7 1/2 weeks; 1 credit. Development of sufficient skills in the basic strokes and knowledge to give the individual an enjoyment of the game. The student is required to furnish one can of new and approved USTA balls.

123. Intermediate Tennis. Three classes per week; 7 1/2 weeks; 1 credit. Development of strokes to enable an individual to play a game of tennis. Emphasis is placed on the strategy of the game of singles and doubles. The student is required to furnish one can of new and approved USTA balls.

124. Beginning Golf. Three classes per week; 7 1/2 weeks; 1 credit. An introduction to the techniques of drives, putts, and short game. This course is designed to give an individual the basic knowledge of the game of golf. Good mechanics are stressed.

125. Intermediate Tennis. Three classes per week; 7 1/2 weeks; 1 credit. Development of further skills of the game of tennis. Emphasis is placed on the strategy of the game of singles and doubles. The student is required to furnish one can of new and approved USTA balls.

126. Beginning Judo. Three classes per week; 7 1/2 weeks; 1 credit. An introduction in Judo which includes the techniques of throws, holdings, lockings, and pinnings. Philosophy and cultural aspects of Sport Judo are also covered.

127. Intermediate Judo. Three classes per week; 7 1/2 weeks; 1 credit. An intermediate course in Sport Judo covering intermediate skills and strategies.

128. Physical Conditioning. Three hours per week; 7 1/2 weeks; 1 credit. This course addresses the basic principles of progressive overload and covers the various aspects of physical fitness. Objectives of the course include knowledge of various weight-training systems, proper use of weight-training equipment, and effective personal training programs.

129. Aerobics I. Three classes per week; 2 credits. This course is designed to introduce the student to a complete physical conditioning program which strengthens the heart and lungs, and tones up the muscles.

130. Beginning Aikido. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed to introduce the fundamentals of Aikido. Emphasis is placed upon the flow of energy and techniques for certifying to teach Aikido. This course contains the basics of fundamental skills in body dynamics, body movements, safety landing, defensive pattern drills, and overall understanding of Aikido as a classical art form. Course provides comprehensive information on the philosophical and historical aspects of Aikido.

131. Kendo. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed to introduce the fundamental Japanese classical swordsmanship in skill components as well as its philosophical foundation. Bokuto (wooden sword), Shinai (bamboo sword) and a full armor are used for the skill training.

132. Intermediate Aikido. Three classes per week; 7 1/2 weeks; 1 credit. Prerequisite: PE 180+. Course is designed to introduce the intermediate level of Aikido dynamics. It contains the basics of fundamental skills in body dynamics, body movements, safety landing, intermediate level of defensive pattern drills, and overall understanding of Aikido as a classical art form.

133. Advanced Aikido. Three classes per week; 7 1/2 weeks; 1 credit. Prerequisite: PE 184+. Course is designed to introduce the advanced level of Aikido dynamics. It contains training in advanced skills in body dynamics, body movements, defensive pattern drills, and overall understanding of Aikido theory and application as a classical art form.

134. Beginning Karate. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed to give the student the understanding and practice of Hatha yoga and the complete form. Course covers yoga postures, breathing exercises, philosophy, and meditation.

135. Introduction to Rock Climbing. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed to prepare students for basic rock climbing. Course skills will include knots, climbing skills, equipment required, and safety knowledge. Course includes one climbing field trip.

136. Disables and Fit. 1 credit. 3 hours per week for 7 1/2 weeks; 2 credits; 3 hours per week for 7 1/2 weeks; 1 credit. Developed for students with a physical disability who wish to participate in an individually designed fitness program.

137. Swimming — Weight Training. Three classes per week; 7 1/2 weeks; 1 credit. Designed to allow students an individualized weight training program. The program will include use of free weights, machines, and appropriate tools for the variety of weight training differences.

138. Aerobics/Jogging. Three classes per week; 7 1/2 weeks; 1 credit. This course is designed for utilizing oxygen over prolonged periods of time (e.g., jogging). Individualized programs presented.

139. Introduction to Aikido. Three classes per week; 7 1/2 weeks; 1 credit. Development of all the strokes to enable an individual to play a good game of badminton.

Emphasis is placed on the strategy of the game of singles and doubles.
designed to introduce further instruction and practice in traditional martial art aspects of Karate-doh. Philosophical understanding and high level of skill proficiency are emphasized.

191. laido (Art of Sword Harmony). Three classes per week; 1 credit. Prerequisites: PE 185+. Philosophy of martial arts will be the focus of this course. This course focuses on the skills dynamics of traditional and ceremonial art forms.

193. Introduction to Kendo. Three classes per week; 1 1/2 weeks; 1 credit. Prerequisite: PE 185+. This course is designed to introduce the student to the basic skills and techniques involved in Kendo. The course emulates the correct mental and physical discipline.

195. Theory of Advanced Aikido. Three classes per week; 7 1/2 weeks; 1 credit. Prerequisites: PE 180+, 184+, 190+ and/or equivalent proficiency level. This course is designed to provide the intermediate - advanced level of Aikido. The course embodies the mental and physical dynamics of the martial arts discipline of Aikido.

197. Theory of Advanced Karate. Three classes per week; 7 1/2 weeks; 1 credit. Pre-requisite: PE 186+, 187+, 190+ and/or equivalent proficiency level. This course is designed to provide the theoretical framework of Karate that embodies the higher principles of physical and mental dynamics and aims to achieve the advanced skills in Karate.

198. Intermediate Self-Defense. Three classes per week; 7 1/2 weeks; 1 credit. Prerequisite: PE 188+ or equivalent skills. This course is designed to provide the student with a basic skill. The course stresses both the application of basic techniques and procedures of self-defense.

III. For Nonphysical Education Majors

199. Topics in Health and Physical Education. 7 1/2 weeks; variable credit. Prerequisites: PE 122, 123, 124, or equivalent. Laboratory classes in physical education courses are offered such as advanced theory class in martial arts, advanced ladsa, self-defense seminar, water skiing, yoga, racquetball, nautilus, swim conditioning, water safety, scuba, and aquatic education.

IV. Physical Education — PE

Students enrolling in 200-level and above PE courses must be health and physical education majors or have permission of the instructor.

200. Foundations of Physical Education and Health. Three classes per week; 3 credits. Introductory course for majors; philosophy, history and physical education and health. Prerequisites and philosophy will be presented. Professional teaching portfolio is introduced.

217. Fundamental Movement Skills and Dance. Lecture 2 hours; 2 credits. This course is designed to introduce the fundamental components of dance and rhythm. The course is designed to provide basic skills in folk dance, square dance, and contemporary dance; stresses dance positions for motions and sequences and appropriate movements. Through participation individuals will develop a range of rhythmic activities to be taught in the physical education course.

218. Aquatics and Outdoor Education. 1 credit. Prerequisite: PE 102+. Required for all PE majors. This course is designed to introduce the student to the skills of swimming and outdoor education for the school setting. Activities will include orienteering, team building, cooperative games, and aquatics. Effective instruction strategies, skills, and assessment of the teaching of these physical activities will be included.

220. Teaching of Team Sports I. Lecture 1 hour; laboratory 3 hours; 1 credit. This course will introduce the student to the sports of soccer, flag football, field hockey, speedball, and other team and field games. The emphasis is on the development and the various strategies, game tactics, and assessment techniques for the teaching of these team sports will be included.

221. Teaching of Team Sports II. Lecture 1 hour; laboratory 3 hours; 1 credit. This course will introduce the student to the sports of basketball, volleyball, and softball. Effective instruction strategies, skills, and assessment techniques for the teaching of these team sports will be included.

222. Teaching of Individual Sports. Lecture 1 hour; laboratory 3 hours; 1 credit. This course will introduce a variety of individual and dual sports for the enhancement of life-span involvement in physical activity. Instructional strategies, skills, and assessment techniques for the teaching of these individual and dual sports will be included.

224. Teaching Elementary Physical Education. Lecture 3 hours; 3 credits. Designed for the preparation in teaching all elementary age children developmentally appropriate physical activities in educational games, educational gymnastics and motor skill development. Skill proficiency levels, learning styles, and effective assessment are emphasized. This course provides an opportunity for in-depth study of selected topics in physical education.

295. Topics in Physical Education. 1-3 credits. Prerequisite: sophomore standing and approval of program advisor. This course provides an opportunity for a student to study selected topics in physical education.

300. Management Skills for Teaching Health and Physical Education. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Focuses in psychological, sociological, and academic needs of students, with specific focus on the organizing and teaching of physical education. Specialized safety concerns and environmental considerations are also addressed. Lesson planning, goal setting, and movement formations unique to HPER activities are included.

301. Teaching Physical Education in the Secondary School — PE 201. Prerequisite: junior standing. Acquires the students with current theories, principles, styles and best practices utilized in teaching physical education in the Secondary School. This course is designed and organized around lesson plans, curriculum development, analysis of skills and performances are emphasized.

302. Introduction to Driver Education: Driver Task Analysis. Three classes per week; 3 credits. Prerequisite: permission of the instructor. An introduction to the vehicle operator's task within the highway transportation system. Sensory perception, HTS hazards, vehicle laws, vehicle capabilities, safety responsibilities, and trip planning are emphasized.

303. Driver Education Instructional Principles. Three classes per week; laboratory 1 hour; 3 credits. Prerequisites: PE 30, 310. This course is designed to introduce the student to the selection and organization of materials, methods, and techniques of driver education including simulation and behind-the-wheel instruction.

318. Motor Learning. Lecture 3 hours; 3 credits. Prerequisite: Junior standing and pass scores on PRAXIS I or State Board of Education-approved SAT scores. Designed to provide the student with experiences in the practical application of theory related to motor learning. Feedback, transfer learning, practice, and motor control principles and concepts are addressed.

319. Physical Growth and Motor Development. Lecture 2 hours; 1 1/2 credit. Prerequisites: PE 318, 319. This course is designed to examine the physical growth and motor development of the human being. Emphasis is on the assessment of physical and cognitive development, particularly in the K-13 ages. Theory and techniques for research in physical growth and development is incorporated into the assessment materials. Attention is directed toward acquisition of basic skills, perceptual-motor development, and physical fitness.

327. Teaching of Physical Education, PreK-8. Lecture 3 hours; 3 credits. Prerequisite: Junior standing. This interactive course is designed to prepare classroom teachers in PreK-8 licensure programs for the teaching of physical education. Appropriate content, instructional strategies and activities, and classroom management, and safety issues will be presented.

404W/504. Adapted Physical Education. Lecture 3 hours; 3 credits. Prerequisites: Acceptance into teacher education. One hour; 1 credit. This course is designed to meet the needs of special populations. Students will be acquainted with and research the different disabilities, learning disabilities, physical disabilities, those who advocate free and appropriate education, and working with the child with disabilities within an ecosystem. A vital component of the course will be the application of theory.

410-506. Tests and Measurement in Physical Education. Three classes per week; 3 credits. Prerequisite: Junior standing. This course is designed to acquaint the student with tests and measurement in the fields of health and physical education. Test construction, scoring, and methods of using results will be presented.

497/597, 498. Topics in Health and Physical Education. 1-3 credits. Prerequisite: Junior standing and approval of program advisor. This course offers an option for in-depth study of selected topics in health and physical education.

VI. Health Education — HE

224. Advanced First Aid and Emergency Care. Three classes per week; 3 credits. This course provides the knowledge and skills essential for proper care in most emergency situations. Aspects of emergency first aid are developed and practiced. Upon satisfactory completion of the course, each student will have the option of receiving certification in CPR and/or First Aid upon payment of a certification fee set by the Red Cross or National Safety Council.

230. Personal and Community Health. Three classes per week; 3 credits. This course is designed to develop an understanding of the social, emotional, and mental dynamics and aims to achieve the advanced proficiency level. This course is designed to introduce the student to the fields of personal and community health.

242. Advanced Health Education. Three classes per week; 3 credits. Prerequisite: Junior standing. In methods of teaching, organization of classes, evaluation of content, standards for health and safety education. Collection, evaluation, and application of health and safety education materials are emphasized. This course is designed to introduce prior to student teaching. Field experience is required.

481/581. Teaching of Sexuality Education in the School Setting. This course is designed to introduce the student to the field of sexuality education. This course is designed to prepare the secondary level student. This course is designed to prepare the secondary level student. Field experience is required.

497/597, 498/598. Topics in Health Education. Three classes per week; 3 credits. Prerequisite: Junior standing. This course provides an opportunity for in-depth study of selected topics in the variety of areas constituting health education.

VII. Health and Physical Education — HPE

230. Field Experience in Physical Education and Health. 1 credit. Prerequisite: passing scores on PRAXIS I or State Board of Education-approved SAT scores. Teacher candidates gain insight into the techniques, methodology, and physical education related to health education. Teacher candidates will be expected to observe and participate in the teaching of simple lessons.

239. Practicum in Physical Education and Health. 2 credits. Prerequisite: admission into teacher education. A clinical experience that allows the teaching candidate to teach, observe, and practice in a field setting. This course is designed to provide the student with a field-based application of effective techniques in behavior, management, instructional strategies, and the development of professional attributes in K-12 school setting (qualifies as a CAP experience).

487. Teacher Candidate Seminar. One hour; 1 credit. Prerequisite: admission into teacher education and approval of the program advisor. A capstone course that prepares the teacher candidate for the internship experience and completion of the professional portfolio. This course is to be taken in the semester preceding the internship experience.

VIII. Recreation and Tourism Studies — RTS

211. Recreation Leadership. Lecture and participation 3 hours; 3 credits. Prerequisite: Sophomore standing. The course provides an introduction to the recreation field, helps to develop entry-level skills, and establishes a theoretical foundation. The course is designed to provide an overview of therapeutic recreation services for a wide variety of clients. Students will be required to facilitate four hours of on-site observation and participation in a leisure service environment.

295. Topics in Recreation and Leisure. Lecture 3 hours; 3 credits. An examination of the historical and philosophical bases of the recreation movement in the U.S. To include a review of theories of play and an assessment of the social, economic and cultural determinants of nonwork-time behavioral patterns. The relationship of leisure to education and the involvement of the government at federal, state and local levels will be considered.

241. Recreation Programming. Lecture 3 hours; 3 credits. Prerequisite: Acceptance into teacher education and completion of approved program advisor. A field-based course in recreation programming in terms of needs assessments, development, content, public relations, funding, facilities, leadership and program development. The course provides the student with the opportunity to organize, implement and evaluate leisure programs and services in a variety of service settings. Students will be required to facilitate four hours of on-site observation and participation in a leisure service environment.

315. Foundations of Recreation and Leisure. Lecture 3 hours; 3 credits. An examination of the historical and philosophical bases of the recreation movement in the U.S. To include a review of theories of play and an assessment of the social, economic and cultural determinants of nonwork-time behavioral patterns. The relationship of leisure to education and the involvement of the government at federal, state and local levels will be considered.

211. Recreation Leadership. Lecture and participation 3 hours; 3 credits. Prerequisite: Sophomore standing. The course provides an introduction to the recreation field, helps to develop entry-level skills, and establishes a theoretical foundation. The course is designed to provide an overview of therapeutic recreation services for a wide variety of clients. Students will be required to facilitate four hours of on-site observation and participation in a leisure service environment.
placed on historical development, the different components of the industry, and career opportunities in commercial recreation and tourism services.

300. Computer Applications in Recreation and Sport Management. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will present the use of computers in the recreation and sport management field and the tools needed to utilize technology in the workplace. Topics covered will include software applications in recreation and tourism settings.

311. Fiscal Planning and Management in Recreation and Sport Management. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will introduce students to the financial principles and management concepts for managing recreation and sport services. Students will be introduced to financial statements and budgeting.

332. Personnel Management in Recreation. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will introduce students to the principles and practices of personnel management in public, private and nonprofit recreation settings.

366. Internship Seminar. Lecture and discussion 1 hour; 1 credit. Prerequisite: All emphasis core courses and junior standing. Agency field placement is required of all students in Recreation and Tourism Studies. Seminar will include resume and cover letter writing skills, internship requirements, agency placement referrals, and interviewing techniques. (cross-listed with SMGT 366) (qualifies as a CAP experience)

386. Recreation and Tourism Studies. 3-6 credits. Prerequisite: Junior standing. Selected field-based experiences in a recreation and tourism service setting. Minimum of 200 clock hours. (qualifies as a CAP experience)

405. Recreation and Natural Resources. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will examine the impact of the influence of leisure and recreation on the environment. In-depth review of the role of government, federal, state, and local levels. Consideration of legislative and environmental movement, and the resource management philosophy of public and private agencies.

410/510. Clinical Aspects of Therapeutic Recreation. Lecture and discussion 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will examine contemporary professional issues and trends impacting leisure and public service agencies.

420. Intervention Techniques in Therapeutic Recreation. Lecture 3 hours; 3 credits. Prerequisite: Junior standing and permission of the instructor. This course will introduce students to various disabling conditions that receive therapeutic recreation services. Therapeutic recreation intervention techniques used while implementing a program will be discussed. Emphasis will be given to the rehabilitative and habilitative goals of intervention techniques.

425. Facility Management and Design. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. Focus is geared toward facility planning and design of indoor and outdoor recreation environments. Course will cover financial management for facility development and maintenance and risk management programs. (cross-listed with SMGT 425)

430. Managing Therapeutic Recreation Services. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. Course is designed to address issues related to managing therapeutic recreation services in health care settings. Topics discussed will include revenue generation, marketing strategies, ethical behavior and service delivery management.

432. Resort, Hotel, and Hospitality Recreation Services. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. The course is designed to introduce students to the resort, hotel, and hospitality industry and the role of hospitality in revenue production.

441. Entrepreneurial Recreation. Lecture 3 hours; 3 credits. Prerequisite: RTS 271. This course is designed to introduce students to the fundamental principles of entrepreneurship. Students will understand the importance of entrepreneurship and the role of effective management in the success of a recreation venture. Entrepreneurial thinking will be stressed in the course as a major requirement for workplace effectiveness and career success.

450. Disabilities and Aging in Therapeutic Recreation. Lecture and discussion 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course is designed to introduce students to a variety of disabilities and the aging process. The course will examine disabilities with a specific focus on the impact of aging on the recreation professional. Projected trends and issues related to disabilities and aging will be discussed.

461/561. Economic and Social Dimensions of Tourism. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. An examination of the economic and social factors that influence the interaction between the host community and its tourists. A review of tourism implications is provided to illustrate the benefits associated with tourism on the environment.

475/575. Tourism and Cultural Heritage Management. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will introduce students to the principles and practices of managing cultural tourism. Assessment, development, and management of cultural tourism products are explored.

482W. Program Evaluation in Recreation. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. A survey of measurement tools and research methods with specific application to program evaluation in recreation and sport management service settings.

485. The Philosophy of Play. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of instructor. An exploration of the role of play in health and wellness emphasis is placed on play behavior and healthy lifestyle.

496. Field Placement in Recreation and Tourism Studies. 3-6 credits. Prerequisite: Junior standing. Selected field-based experiences in a recreation and tourism service setting. Minimum of 200 clock hours. (qualifies as a CAP experience)

497. Independent Study. 3 credits. Prerequisite: Junior standing or permission of the instructor. Individualized instruction with research, specialized studies, or other scholarly writing.

516. Theory and Application in Recreation and Tourism. Lecture 3 hours; 3 credits. Course examines concepts, theories, and applications in recreation and tourism. The role of recreation/tourism from the local to the global perspective will be explored. Travel and tourism in a variety of areas comprising recreation and tourism studies.

495/595. Topics. 1-3 credits. Prerequisite: Junior standing. This course provides an opportunity for in-depth study of selected topics. (cross-listed with SMGT 495/595)

519. Advanced Sports and Exercise Science. Lecture 3 hours; 3 credits. The objective of this course is to introduce students to various disabling conditions that receive therapeutic recreation services. Therapeutic recreation intervention techniques used while implementing a program will be discussed. Emphasis will be given to the rehabilitative and habilitative goals of intervention techniques.

520. Curriculum Development in Physical Education. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. Course is designed to provide information and practical experience in the athletic training setting. The course will emphasize practical applications in the athletic training setting.

521. Strength and Conditioning Applications. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. This course will introduce students to various disabling conditions that receive therapeutic recreation services. Therapeutic recreation intervention techniques used while implementing a program will be discussed. Emphasis will be given to the rehabilitative and habilitative goals of intervention techniques.

530. Readings in Contemporary Issues in Recreation, Parks, and Sport. Lecture 3 hours; 3 credits. Literature and research on ethical issues in sport, recreation, and wellness settings. Emphasis will be placed on the principles of administrative ethical decision-making skills and practices.

560. Legal Aspects of Sport. Lecture 3 hours; 3 credits. Prerequisite: Graduate standing. This course will introduce students to various disabling conditions that receive therapeutic recreation services. Therapeutic recreation intervention techniques used while implementing a program will be discussed. Emphasis will be given to the rehabilitative and habilitative goals of intervention techniques.

IX. Exercise Science, Sport, Physical Education and Recreation — ESPR

601. Adapted Physical Education Design and Supervision. Lecture 3 hours; 3 credits. This course is designed to provide students with an understanding of treatment concepts, theories, and applications in recreation and tourism. The role of recreation/tourism from the local to the global perspective will be explored. Travel and tourism in a variety of areas comprising recreation and tourism studies.

617. Athletic Training - Physical Assessment of the Human Body. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of the instructor. Course is designed to provide practical experience in the athletic training setting.

620. Readings in Contemporary Issues in Recreation, Parks, and Sport. Lecture 3 hours; 3 credits. Literature and research on ethical issues in sport, recreation, and wellness settings. Emphasis will be placed on the principles of administrative ethical decision-making skills and practices.

622. Contemporary Issues in Athletic Training. Lecture 2 hours; 2 credits. Designed to expose the student to the latest up to date ideas and techniques in the area of athletic training.

623. Athletic Training Practicum I. 1 credit. Designed to provide practical experience in the athletic training setting and an understanding of evidence-based practice in the sports medicine setting.

625. Clinical Biomechanics for Rehabilitation Professionals. Lecture 3 hours; 3 credits. Prerequisite: Introductory biomechanics and anatomy or permission of instructor. Course will cover the principles and techniques utilized in clinical biomechanics, and clinical anatomy relevant to the rehabilitation process of the physically active. Specific rationale will be discussed concerning mechanical properties of musculoskeletal tissues including: structure, function, mechanical properties, healing process, and factors affecting mechanical and healing properties. Participants will examine current and traditional literature from a variety of disciplines including biomechanics, engineering, neuroscience, exercise science, physical education, neurology, and rehabilitation to identify ways the biomechanics and an understanding of movement in relation to current research findings, breakthrough techniques and advanced training techniques, and popular conditioning practices.

626. Advanced Orthopaedic Evaluation and Athletic Training. Lecture 3 hours; 3 credits. A course designed to provide information relative to the recognition and rehabilitation of athletic injuries involving the spine.
630. Exercise Physiology. 3 credits. Prerequisite: EXSC 409 or equivalent. Review of current physiological and psychological research on the role of exercise in cardiovascular-respiratory system, metabolic effects of exercise, neuromuscular relationships, and the effects of training on motor and ergogenic performance, motivation, attitude, and other factors on performance and health.

633. Athletic Training Practicum II. 1 credit. Designed to provide practical experience in the athletic training setting and an understanding of evidence-based practice in the sports medicine setting.

639. Current Research in Human Growth and Motor Development. Lecture 3 hours; 3 credits. Prerequisite: ESRS 635. This applied course is designed to introduce students to statistical and analytical techniques commonly used in exercise science, physical education, recreation, and sport management research.

635. Research Methods in Health, Physical Education, Recreation and Sports. 3 credits. Types of research, selection of problems, location of research information, collection and classification of data, organization, presentation and interpretation of materials.

636. Research Problems in Health, Physical Education, Recreation and Sports. 3 credits. Prerequisite: ESRS 635, taken in the last semester of graduate work. Practice in the use of statistical and analytical techniques in solving problems in education; supervised student research.

639. Current Research in Human Growth and Motor Development. Lecture 3 hours; 3 credits. This course will examine the latest research and research relating to qualitative and quantitative changes in motor skills. Attention will be given to extending learning experiences to maximal development, self-motivation, and the entire life span.

640. Principles and Concepts of Motor Learning. Lecture 3 hours; 3 credits. Analysis of learning theories and selected factors as they affect the development of motor skills. Prerequisite: BIOL 250.

642. Clinical Exercise Testing and Prescription. Lecture 3 hours; 3 credits. Prerequisite: ESRS 630. Principles of diagnostic exercise assessment, cardiovascular physiology, electrocardiography, ACSM guidelines to exercise testing and prescription for symptomatic and asymptomatic populations.

643. Athletic Training Practicum III. 1 credit. Designed to provide practical experience in the athletic training setting and an understanding of evidence-based practice in the sports medicine setting.

645. Assessment and Evaluation in Physical Education. Lecture 3 hours; 3 credits. Techniques for assessment and evaluation methods for physical education classrooms and programs. A variety of cognitive and authentic assessment methods will be introduced and compared. Students will develop and test assessments in field-based settings.

647. Education in Athletic Training. Lecture 3 hours; 3 credits. Designed to introduce the current concepts of curriculum development, evaluation methods, course construction, management of learning and instruction and aspects of teaching as related to the athletic training didactic and clinical experience.


653. Athletic Training Practicum IV. 1 credit. Designed to provide practical experience in the athletic training setting and an understanding of evidence-based practice in the sports medicine setting.

655. Supervised Teaching Internship. 2 credits. Individualized practical experience in the area of athletic training education.

661. Seminar in Nutrition for Sports and Health. Lecture 3 hours; 3 credits. Prerequisites: ESRS 630 and 635. An intensive study of the role of nutrition in health and human physical and athletic performance. General areas covered include the role of the six major classes of nutrients in health and sport, physiologic and metabolic interrelationships, malnutrition, nutrition in growth and aging, and diet and nutrition in the prevention of disease.

667. Internship in Physical Education, Recreation and Sports. 1-6 credits. Prerequisite: completion of 75 percent of graduate work. Designed to provide detailed practical experience (400 clock hours) in one of the areas of health education, physical education, recreation and sports. Required of all students entering the administrative emphasis area. Minimum of 300 clock hours is required in a minimum of one year full-time administrative experience.

670. Administrative Principles for Recreation, Sport, Health and Physical Education. 3 credits. Prerequisite: BIOL 250. Director responsibility in recreation, sport, health and physical education; development of an understanding of the administrative responsibilities and function of directors in health, physical education, recreation and sport.

680. Problems in Health Education. Lecture 3 hours; 3 credits. Problems in teaching health education on the elementary level; teacher's role and interaction with students. Emphasizes the role of nutrition as a means to enhance health, social, economic and environmental relationships. Topics covered include the role of nutrition in health and disease, health education for all age groups, and the role of nutrition in public policy. Special emphasis will be given to the role of nutrition in health care and to the role of nutrition in social and political policy. Prerequisites: BIOL 250. An investigation of different research methodologies in the measurement of physiologic responses to exercise. Emphasis is placed on understanding American College of Sports Medicine (ACSM) criteria to assure the appropriateness of experimental techniques, and equipment necessary to evaluate changes in body composition and various metabolic, cardiovascular, and respiratory adjustments during exercise.

417W. Advanced Kinesiology and Biomechanics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 111N. This advanced course is designed to identify the basic principles of kinesiology and biomechanics through videoanatomic and other techniques.

420. Research Methods in Exercise Science. Lecture 3 hours; 3 credits. Prerequisites: permission of instructor. Introduction to the scientific method applied to exercise science research including biostats, review of the literature, research design, statistical techniques, appropriate statistical analysis, research writing, and peer review.

426/526. Exercise Physiology I. Lecture 3 hours; 3 credits. Prerequisite: BIOL 250. An investigation into the metabolic adaptations, neuromuscular, endocrinological, and respiratory responses to acute and chronic exercise endurance and resistance exercise for enhanced health and physical performance are integrated.

427/527. Exercise Physiology II. Lecture 3 hours; 3 credits. Prerequisites: EXSC 426/526 and BIOL 250. A continuation of Exercise Physiology I. Focuses on cardiovascular responses to exercise and applied exercise physiology. Emphasis is placed on understanding the effects of exercise on various metabolic, cardiovascular, and respiratory systems.

431/531. Wellness Programming and Administration. Lecture 3 hours; 3 credits. Prerequisites: EXSC 409 or 426. A study of the current research and methodology of wellness programs, with a focus on administration of exercise prescription for a variety of chronic diseases.

431/532. Wellness Programming and Administration. Lecture 3 hours; 3 credits. Prerequisites: EXSC 409 or 426. An introduction to the principles of administration and operation of exercise and wellness programs to individuals, groups, centers and corporate settings.

430/540. Exercise and Aging. Laboratory 3 hours; 3 credits. Prerequisites: BIOL 250. Emphasis is placed on the physiological study of how exercise interacts with the aging process, a survey of common medical problems of the elderly as they relate to exercise, and an examination of exercise prescription and program implementation for the elderly population.

456/556. Sport Psychology. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Study of the psychological bases of coaching strategies and methodologies. Emphasis is placed on applying knowledge in field settings. (cross-listed with SMGT 456/556)

XI. Sport Management — SMGT

214. Introduction to Sport Management. Lecture 3 hours; 3 credits. Course will introduce students to the sports industry. Emphasis will be placed on the role of the sport and the economical impact of sports in America.

235. Sport Management Recitation. 1 credit. Corequisite: SMGT 214. This course will be taught through the Monarch Advantage Program (MAP) section for sport management majors.

305. Sport Administrative Theory. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Principles of organization and administration as they apply to managing sport organizations. Issues related to working with and through individuals to achieve organizational goals and objectives are discussed.

315. Sport Media and Public Relations. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An introduction to sport media and public relations. Special emphasis will be placed on career opportunities in sport and the various mediums that can be used to convey messages. The internal and external publics involved in sport public relations will be examined, as well as the various steps involved in the process. Additional emphasis will be placed on studying the roles of community relations, customer relations, and emergency management.

331. Fiscal Planning and Management in Sport and Recreation. Lecture 3 hours; 3 credits. Prerequisite: junior standing. An introduction to the fiscal aspects of sport and recreation management. This course is designed to examine the principles and practices of financial management in diverse recreation and sport service settings. Emphasis will be placed on the role of financial planning and analysis to effectively manage a successful operation. Cross-listed with EXSC 331.

456/556. Sport Psychology. Lecture 3 hours; 3 credits. Prerequisite: junior standing. Study of the psychological bases of coaching strategies and methodologies. Emphasis is placed on applying knowledge in field settings. (cross-listed with SMGT 456/556)
141W. Sport Marketing. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Course will examine the relationship between sport products and sport markets, the communication mix, market research, and the role of strategic planning for business sponsorship.

425. Facility Management and Design. Lecture 3 hours; 3 credits. Prerequisite: RTS 211 or permission of the instructor. An examination of the principles and practices of facility management in recreation. Focus is geared toward the planning, design, and management of indoor and outdoor recreation facilities as well as how to review and develop effective maintenance and risk management programs. (cross-listed with RTS 385)

450/550. Ethics in Sport Management. Lecture 3 hours; 3 credits. Prerequisite: senior standing. This course is designed to provide students with a basic knowledge of the social, ethical, and philosophical values. It will examine the historical and contemporary conditions of Filipino American people. It also examines the immigrant experience and various artistic, cultural and philosophical values.

100. Introduction to Filipino American Studies. Lecture 3 hours; 3 credits. Prerequisites: Marymount Professor J. Griffith (Chief Departmental Advisor). Instructor M. Stiner. Professor J. Griffith (Chief Departmental Advisor). Instructor M. Stiner.

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387. Honors: Introductory Financial Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 317 and senior standing. An overview of the operational aspects of life insurers, insurance intermediaries, and insurance policies and how they relate to employer-sponsored benefit programs.

396. Finance, Real Estate or Insurance Practicum. 1-3 credits. Prerequisites: FIN 317 and junior standing. This course considers the ability of group insurance and single coverage to alleviate the financial problems arising from death, disability, medical treatment and retirement. Primary emphasis on design, tax and accounting issues as they relate to employer-sponsored benefit programs.

398. Honors: Legal Environment of Business. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 317 and junior standing. This course offers a case study approach to the formulation and implementation of the comprehensive personal financial plan. Professional standards and communication skills are also stressed.

551. Management and Leadership in Sport. Lecture 3 hours; 3 credits. Prerequisite: junior standing. The course presents an overview of selected topics designed for non-majors, or for elective credit. It will be repeated for credit. Prerequisite: permission of internship coordinator. Designed to provide students with a basic knowledge of the professional environment of sport management. Specific emphasis will be placed on studying and applying the steps in the marketing process.

399. 360. Philippino-American Studies — FAST. Lecture 3 hours; 3 credits. Prerequisites: RTS 660 and permission of the instructor. This course will examine the historical and contemporary conditions of Filipino American people. It also examines the immigrant experience and various artistic, cultural and philosophical values. (cross-listed with RTS 385)
413. Risk Analysis and Control. Lecture 3 hours; 3 credits. Prerequisites: FIN 317 or equivalent and junior standing. This course introduces the student to the theories and techniques of risk analysis and control. Recommended elective for nonbusiness as well as business majors. This course focuses on the risk analysis and control phases of the insurance industry and other corporate and governmental organizations. Particular attention is paid to the recognition, measurement, and treatment of pure risks, risk finance, nonfinancial risk management, and decision making under conditions of uncertainty. Cases and computer analyses are employed.

413. Risk Analysis and Control. Lecture 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and junior standing. This course develops the financial tools and techniques to evaluate and select among alternative financial assets. The emphasis is on the individual investor. Real world experience includes stock analysis, portfolio simulations, and discussions of financial instruments in the securities industry. (qualifies as a CAP experience)

432. Intermediate Financial Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and junior standing. Theoretical framework relevant to decision making in financial management: capital budgeting, capital structure, cost of capital, and capital management. Required.

433. Introduction to Futures and Options. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and junior standing. An introduction to the understanding of futures and options. Basic features and trading mechanisms; valuation of financial derivatives; methods of managing financial risk; arbitrage techniques; and speculation strategies.

539. Management Information Systems. Lecture and discussion 3 hours; 3 credits. Prerequisite: FIN 323 with a grade of C or better. An examination of the objectives, functions, problems, practices, and government regulations of financial institutions.

435. International Financial Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 317 or equivalent and junior standing. This course develops the ability to conduct international business including financing and hedging of particular interest.

439. Financial Decision Making. Lecture and discussion 3 hours; 3 credits. Prerequisite: FIN 432 with a grade of C or better. Application of financial theory and techniques to the analysis and solution of actual financial problems. Case analysis.

442. Principles of Financial Planning Decision Making. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 317, 319, and 431. A capstone course employing a study approach, integrating the technical knowledge necessary for professional personal financial planning. Retirement and estate planning.

443. Seminar in Insurance and Risk Management. Lecture 3 hours; 3 credits. Prerequisite: FIN 317 and at least two courses from FIN 340, 410, 411, 412, and 413. This course is designed as a capstone course for students concentrating in risk management and insurance. The instructor supervises students’ investigations of specific topics and develops student ability to manage their own risk and insurance. Topics will vary with the professional goals and interests of the students. Professional standards and communications are emphasized.

450. Real Estate Finance. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and 323 or permission of the chief departmental advisor. Financial decision making involving flow and functions of real estate boundaries.

451. Real Estate Appraisal. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and 323 or permission of the instructor. Economic theories of value applied to real estate as a guide to business decisions.

454. Real Estate Investment Analysis. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and 323 or permission of the instructor. Examination of developments in real estate finance and investment with use of computer terminal models.

458. Real Estate Market Analysis. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and 323. Topics includes real property development, financial feasibility and market analysis. Recommended taking after 414-450 and 454.

497. SelectedTopics in Finance. 3 credits. Prerequisite: permission of the department chair. For advanced students in financial management.

498. Selected Topics in Real Estate. 3 credits. Prerequisite: permission of the department chair. For advanced students in real estate.

499. Selected Topics in Insurance. 3 credits. Prerequisite: permission of the department chair. For advanced students in insurance.

505. Financial Management. Lecture 3 hours; 3 credits. Prerequisite: ACC 601 and DSC 600. The course develops basic concepts: wealth maximization, net present value, security valuation, risk-return analysis, capital budgeting, cost of capital, capital structure, and dividend policy.

610. Principles of Risk and Insurance. Lecture and discussion 3 hours; 3 credits. Prerequisites: graduate standing or permission of the director of the Finance Department. Risk theory as applied to the various fields of insurance, including life, health, property-liability and employee benefit.

633. The Legal Environment of Business and the Age of Electronic Commerce. Prerequisite: graduate standing. An examination of the objectives, functions, problems, practices, and government regulations of financial institutions. (qualifies as a CAP experience)

668. Finance Internship. 1-3 credits. Prerequisites: FIN 605, graduate standing, and permission of the department chairman. Advanced financial management projects involving real-world experience and applying theories, concepts, and financial management tools in a business environment.

693. Selected Topics in Insurance. 1-3 hours; 1-3 credits. Prerequisites: permission from the department chair and the graduate program director. Study designed for students who have had one or more of the required courses waived, or for students desiring additional work in a finance area of particular interest.

698. Selected Topics in Real Estate. 3 hours; 3 credits. Prerequisites: permission from the department chair and the graduate program director. Study designed for students who have had one or more of the required courses waived, or for students desiring additional work in a finance area of particular interest.


738/839. Management of Financial Institutions. Lecture and discussion 3 hours; 3 credits. Prerequisite: FIN 605. Examines such topics as the financial aspects of international business, including financing and financial activities of firms involved in international transfer of goods and services and decision making in connection with the asset management financing activities of multinational corporations.


740. Futures and Options. Lecture 3 hours; 3 credits. Prerequisite: FIN 605. A study of futures and options contracts. Focuses on fundamentals, trading strategies, and hedging techniques. Emphasis is on practical applications of futures and options in real-world situations.

740. Futures and Options. Lecture 3 hours; 3 credits. Prerequisite: FIN 605. A study of futures and options contracts. Focuses on fundamentals, trading strategies, and hedging techniques. Emphasis is on practical applications of futures and options in real-world situations.

861. Seminar in Investments. Seminar 3 hours; 3 credits. Prerequisites: FIN 737/837, 738/838. The seminar focuses on the latest developments in investment management and the various factors that influence investment decisions. The seminar is designed to prepare students for professional careers in investment management.

862. Seminar in International Financial Management. Seminar 3 hours; 3 credits. Prerequisites: FIN 737/837, 738/838, and 735/835. This course is structured to provide the student with research on international capital markets and international financial management. Topics covered include optimal investment and financing decisions, cost of capital, option pricing, and hedging strategies. Emphasis is placed on practical applications of theoretical concepts. Emphasis is on practical applications of theoretical concepts.

863. Directed Research. Seminar 1-3 credits. Prerequisite: FIN 738/838. A directed reading and study course of advanced developments in the field of finance. Requires individual meeting with the advisor and the assistant chair of the department.

899. Dissertation. 1-12 credits. Prerequisite: FIN 863. An approved research project, written under the supervision of a faculty advisor, in which the student demonstrates the ability to conduct original research. The complete project must be approved by the dissertation committee.

Foreign Languages and Literatures

Professors F.A. Lubich (Chair of the Department of Foreign Languages and Literatures), S.J. Foster (Chief Departmental Advisor), and Roseann Runte (President of the University of Nebraska at Kearney). Associate Professor M.M. Daas, A.J. Huizar, C. P. Dunlop, and H. M. Schlipphacke. Senior Lecturer M. Ishibashi. Lecturer N. T. Miguez. Language Lab Director B. R. Facer.

Arabic — ARAB

111F. Beginning Arabic. Lecture 6 hours; 6 credits. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

121. Intermediate Arabic. Lecture 6 hours; 6 credits. Prerequisite: ARAB 111F.

311. Advanced Arabic Language and Culture I. Lecture 3 hours; 3 credits.

312. Advanced Arabic Language and Culture II. Lecture 3 hours; 3 credits. Prerequisite: ARAB 311.

395-396. Topics in Arabic. 1-3 credits. Prerequisite: ARAB 212 or equivalent. A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

Chinese — CHIN

111F. Beginning Chinese. Lecture 6 hours; 6 credits. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

121. Intermediate Chinese. Lecture 6 hours; 6 credits. Prerequisite: CHIN 111F. Lecture 3 hours; 3 credits each semester.

311. Advanced Chinese Language and Culture I. Lecture 3 hours; 3 credits. Prerequisite: CHIN 212.

312. Advanced Chinese Language and Culture II. Lecture 3 hours; 3 credits. Prerequisite: CHIN 311.

395-396. Topics in Chinese. 1-3 credits each semester. A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

490. Topics in Chinese. Lecture 3 hours; 3 credits. Prerequisite: senior standing or permission of the instructor. A study of selected topics designated to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. This course will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

French — FR

101F-102F. Beginning French I and II. 101F and 102F. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory. 3 credits each semester.

195, 196. Topics in French. 1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

FOREIGN LANGUAGES AND LITERATURE COURSES 293
294 OLD DOMINION UNIVERSITY

Introduction to the major works in medieval literature from the Chanson de Roland to the "Chanson de geste," followed by representative works from the Renaissance, including new and developing forms, such as the autobiography.

420/520. Francophone Civilization. Lecture 3 hours; 3 credits. Prerequisite: FR 201, advanced placement or permission of the department chair. A study of the culture and civilization of the main Francophone countries, the Magreb, West Africa, La Republique Malgache, the Cameroons, Benin, and Switzerland, through selected cultural readings, art, music and literature.

427/527. Studies in Seventeenth-Century French Literature. Lecture 3 hours; 3 credits. Prerequisite: senior standing or permission of the department chair. A study of the two main currents of ideas of the Age of Reason or Enlightenment: the rationalistic drive to question established authority, exemplified by the "Encyclopedie" and leading to the Revolution of 1789; and the Rousseauist return to nature and emolity. Representative readings.

437/537. Studies in Eighteenth-Century French Literature. Lecture 3 hours; 3 credits. Prerequisite: senior standing or permission of the department chair. A study of the post-Revolutionary (1789) literary movements: Romanticism, Realism, Naturalism, Symbolism, which opened new horizons of modern science and culture in France. Representative works include Balzac, Flaubert, Maupassant, Zola, with a special focus on the "natural" novel. Representative readings.

438/538. Studies in Twentieth-Century French Literature. Lecture 3 hours; 3 credits. Prerequisite: senior standing or permission of the department chair. A study of the current trends and major genres of French literature. Representative works include Sartre, Camus, Celine, Duras, with special focus on the "existential" novel and its influence on the modern literary imagination.

449/549. A New History of French Cinema. Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of instructor. This course will function as a survey of French film classics from the birth of cinema through contemporary times. We will also look at the stylistic and aesthetic advances, the vast new horizons to be discovered are mainly through: Dadaism, Surrealism, Existentialism, Literature of the Absurd, Structuralism focused on the anguish, absurdity, and madness of modern life.

469/469. A Of French Cinema. Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of instructor. This course will function as a survey of French film classics from the birth of cinema through contemporary times. We will also look at the stylistic and aesthetic advances, the vast new horizons to be discovered are mainly through: Dadaism, Surrealism, Existentialism, Literature of the Absurd, Structuralism focused on the anguish, absurdity, and madness of modern life.

469/469. Of French Cinema. Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of instructor. This course will function as a survey of French film classics from the birth of cinema through contemporary times. We will also look at the stylistic and aesthetic advances, the vast new horizons to be discovered are mainly through: Dadaism, Surrealism, Existentialism, Literature of the Absurd, Structuralism focused on the anguish, absurdity, and madness of modern life.

497/498. Tutorial Work in Special Topics in French. 1-3 credits each semester. Prerequisites: standing and approval of the department chair. Independent study and research on topics approved by the director of an instructor. Conferences and papers as appropriate.

498/498. Tutorial Work in Special Topics in French. 1-3 credits each semester. Prerequisites: standing and approval of the department chair. Independent study and research on topics approved by the director of an instructor. Conferences and papers as appropriate.

499/499. Senior Seminar. 3 credits each semester. Participation in a seminar, with a focus on the mastery of spoken and written German. Recommended for German majors.

501F/502F. Beginning German I and II. 101F is prerequisite to 102F. Lecture 3 hours each semester. Oral and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive participation in the laboratory.

195, 196. Topics in German, 1-3 credits each semester. Prerequisite: none. A study of selected topics designed to enhance the non-major student's competence in the language. These courses may not be offered regularly. These courses appear in the course schedule booklet and are more specifically described in a supplemental distributed to graduate program directors.

697/698. Tutorial Work in Special Topics in French. 1-3 credits. Prerequisites: standing and approval of the department chair. This course will allow an individual student to pursue a special topic or project under the guidance of a professor.

German — GER

101F/102F. Beginning German I and II. 101F is prerequisite to 102F. Lecture 3 hours each semester. Oral and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive participation in the laboratory.

195, 196. Topics in German, 1-3 credits each semester. Prerequisite: none. A study of selected topics designed to enhance the non-major student's competence in the language. These courses may not be offered regularly. These courses appear in the course schedule booklet and are more specifically described in a supplemental distributed to graduate program directors.

408/508. Conversation and Composition. Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W, or permission of the department chair. This course deals with the finer points of the language and focuses on helping students to develop a good style in written and spoken German. After a short introduction to pronunciation, students must pass oral presentations of non-native speakers are analyzed and treated individually.

410W/510. Berlin-Paris: Crucibles of European Ideas. Lecture 3 hours; 3 credits. Prerequisite: German and French language proficiency. This course will appear in the course schedule booklet, and will more fully described in a supplemental distributed to all academic advisors.

405/505. Advanced German Grammar and Syntax. Lecture 3 hours; 3 credits. Prerequisite: GER 312W or permission of the department chair. An intensive study of the German grammar and development of stylistic vocabulary and usage, including, tense, case, mood, and subordination. 

410W/510. Berlin-Paris: Crucibles of European Ideas. Lecture 3 hours; 3 credits. Prerequisite: German and French language proficiency. This course will appear in the course schedule booklet, and will more fully described in a supplemental distributed to all academic advisors.

405/505. Advanced German Grammar and Syntax. Lecture 3 hours; 3 credits. Prerequisite: GER 312W or permission of the department chair. An intensive study of the German grammar and development of stylistic vocabulary and usage, including, tense, case, mood, and subordination.

410W/510. Berlin-Paris: Crucibles of European Ideas. Lecture 3 hours; 3 credits. Prerequisite: German and French language proficiency. This course will appear in the course schedule booklet, and will more fully described in a supplemental distributed to all academic advisors.

405/505. Advanced German Grammar and Syntax. Lecture 3 hours; 3 credits. Prerequisite: GER 312W or permission of the department chair. An intensive study of the German grammar and development of stylistic vocabulary and usage, including, tense, case, mood, and subordination.

410W/510. Berlin-Paris: Crucibles of European Ideas. Lecture 3 hours; 3 credits. Prerequisite: German and French language proficiency. This course will appear in the course schedule booklet, and will more fully described in a supplemental distributed to all academic advisors.
435/535. Matriarchy and Modernity: Western Civilization and Its Cultural Re-Orientation. Lecture 3 hours; 3 credits. Prerequisite: German section students must read and write in German. German poets and cultural anthropologists of the 19th and 20th centuries wrestled with the first imaginary and graphic aspects of German Matriarchies, which turned into utopian counter-cultures to our Western civilization. As such they informed a variety of anti-patriarchal discourses and became an integral part of the social and sexual revolutions of modernity. The course will trace these creative developments through a variety of texts, including Goethe, Kafka, Nietzsche, Freud, Jung, Hesse, Joyce, Hemingway, Ingeborg Bachmann, and Christian Wolff. As influential intellectual styles of feminist art and feminist theory. (Cross-listed with FLET 435/535)

445/456. New German Film. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: Successful performance on the reading placement test. A study of selected films of German- speaking authors. The course will begin with a survey of the cultural and political development of Germany's Weimar Republic from its origins in the chaotic aftermath of a lost war and failed revolution through the third republic. Advanced study of selected texts which may not be offered regularly. These courses will appear in the course schedule booklet and will be more fully described in a supplement distributed to all academic advisors.

467/468. Tutorial Work in Special Topics in German. 1-3 credits each semester. Prerequisite: senior standing and approval of the department chair. Independent reading and study under the direction of an instructor. Conferences and papers as appropriate.

495/595, 496/596. Topics in Japanese. 1-3 credits each semester. Prerequisite: third-year Japanese or permission of the instructor. A study of selected topics in Japanese. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

Latin — LATN

101F-102F. Beginning Latin I and II. 101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Introduction to Latin literature and Roman civilization. Graded Latin readings. Study of Roman culture and its influence.


295, 296. Topics in Russian. 1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

395-396. Topics in Latin. 1-3 credits each semester. Prerequisite: LATN 102F or equivalent. A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

Portuguese — PRTG

101F-102F. Beginning Portuguese I and II. Lecture 3 hours; 3 credits each semester. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

201-202. Intermediate Portuguese I and II. 201 is prerequisite to 202. Lecture 3 hours; 3 credits each semester. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

Spanish — SPAN

101F-102F. Beginning Spanish I and II. 101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

201-202. Intermediate Spanish I and II. 201 is prerequisite to 202. Lecture 3 hours; 3 credits each semester. Oral drill and discussion of grammar principles, written exercises, and reading assignments. This course requires extensive work in the language laboratory.

295, 296. Topics in Spanish. 1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

395-396. Topics in Spanish. 1-3 credits each semester. Prerequisite: RUS 202 or equivalent. A study of selected topics designed as electives. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

395-396. Topics in Spanish. 1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

Spanish — SPAN

101F-102F. Beginning Spanish I and II. 101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. An introduction to the Spanish language providing a foundation in listening, speaking, reading, writing, and cultural immersion. This course is required in addition to the second year level of Spanish and placement test. This course is designed for students who have had significant experience in the study of Spanish but do not place in the second year of the program.

195, 196. Topics in Spanish. 1-3 credits. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and
195/196. Topics in Foreign Languages, 1-3 credits. A study of selected topics for elective credit. These courses will appear in the schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

365. Foreign Language Practicum, 3 credits. Prerequisites: nine credit hours of upper-level language at ODU, junior standing. Internships in private, public, and business organizations involving the translation of national, foreign products or are involved in teaching French, German or Spanish. (qualifies as a CAP experience)

496/496. Topics in Foreign Languages in Pre-K through Grade 12. Lecture 3 hours; 3 credits. Prerequisite: permission of the Department of Foreign Languages. Corequisite: 495 or 595 and permission of the student teaching. A systematic approach to established and experimental methods of foreign language instruction.

455. Field Practicum in Foreign Languages. Hours to be arranged; 1 credit. Must be taken concurrently with FL 452 Students observe established teachers and test selected teaching practices in secondary school settings. Available for pass/fail grading only. (qualifies as a CAP experience)

496/496. Topics in Foreign Languages, 1-3 credits each semester. Prerequisite: permission of the instructor or, in the case of 956, graduate standing. The advanced study of selected topics to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

497/498. Tutorial Work in Special Topics in Foreign Languages and Literatures. 1-6 credits. Prerequisite: appropriate survey course or permission by the instructor and chair. Independent tutorial study on a topic to be selected under direction of professor.

603. Colloquium for Foreign Language Teachers. Lecture 1-3 hours; 1-3 credits. Prerequisite: graduate standing. A study of recent research and new material for the teaching of foreign languages. Will focus on effective classroom implementation of new materials and strategies that facilitate the acquisition of the second language. A variety of topics will be discussed including using videos and technology, reading strategies, grammar in action, and communicative language testing.

701. Foreign Language and Culture for Business, 3 credits. Prerequisite: graduate standing in the College of Business and Public Administration. Students work with instructor in highly structured learning environment to acquire proficiency in a foreign language and culture.

Foreign Languages in English Translation — FLET

100L. Understanding World Literature. Lecture 3 hours; 3 credits. This multicultural course introduces the student to the forms and meanings of poems, stories, novels, and films of different periods and countries, providing the students with the skills necessary for the appreciation and comparative analysis of these works both as literature and as representations of rich and diverse cultural values. A primary focus of the course will be the role of culture in the formation of national and individual identity, paying special attention to gender, sexuality, race, and class. All works will be read in English.

307. Understanding European Film. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: 200 level course in European Literature or permission of instructor. This course provides students with the skills necessary for the appreciation and understanding of films from a variety of European countries. Students will gain the vocabulary necessary to analyze individual films and for the comparative analysis of films from different cultural and historical contexts. The
course will focus on issues such as national and individual identity, film as aesthetic form, gender and sexuality, and popular culture. (COMM 307)

310W. The Faces of Japan. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of instructor. Lectures introducing the Japanese literature, culture, contemporary life style and geography of Japan. Taught in English.

315. Russian Literature in Translation. Lecture 3 hours; 3 credits. Prerequisite: FLET 100L, 112L, 144L or FLET 100L. A well-rounded introduction to Russian literary periods, writers and their works. (Writing Intensive) This course will not be open to all students, but advanced level Russian language students may opt for dual-test format to develop familiarity with the literary language.

350. Greek and Roman Mythology. Lecture 3 hours; 3 credits. Prerequisite: FLET 100L, 112L, 144L or instruction in a minor language. A study of the mythological traditions of the ancient Greeks and Romans. Students will gain insight into how literature functions in traditional societies and become well versed in important works of mythological literature from classical antiquity which continue to influence the Western European cultural tradition.

410W/510. Berlin-Paris: Crucibles of European Ideas. Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. This course explores the cultural movements that have characterized the German-French modernities and differences from the early 1900s through the 1990s in cross-disciplinary discourses such as film, literature, art, politics, and economics.

420/520. Thomas Mann: Arts and Politics in the 20th Century. Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. This course will focus on the interactions among people and their ecosystems. The course will regularly appear in the course schedule and will be more fully described in information distributed to all academic advisors.

435/535. Matriarchy and Modernity: Western Civilization and Its Cultural Re-Orientation. Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. This course will focus on the development of the New German Cinema, its , its topics and its form of representation. Focusing on six directors and six films, it will explore major themes and trends of the New German Cinema, among them: the Third Reich, Germany after the war, terrorism in the 1970s, aestheticism, marginalization and gender roles.

445/545. New German Film. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. This course will focus on the development of the New German Cinema, its topics and its representation. Focusing on six directors and six films, it will explore major themes and trends of the New German Cinema, among them: the Third Reich, Germany after the war, terrorism in the 1970s, aestheticism, marginalization and gender roles.

455/555. Hesse, Mann, Kafka, and Brecht. Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. A study of representative works from the four most important twentieth-century German writers. Selected works in translation from Hesse, Mann, Kafka, and Brecht are studied and contribute to understanding the intellectual climate in Europe during the first half of this century.

471/571. Hispanic Women Authors. Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. A study of diverse perspectives of the Hispanic world. (Writing Intensive) This course will not be open to all students, but advanced level Spanish language students may opt for dual-test format to develop familiarity with the literary language.

360. Foreign Literature in English Translation. 1-3 credits each semester. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. The expanded study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest with the assistance of a professor. The professor will determine the frequency with which these courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

General Education  GEN

101. New Portal to Appreciating Our Global Environment. Lecture 1 hour; discussion sections 2 hours; 3 credits. Required for all first-year and transfer students with fewer than 12 transfer credits. This course is multidisciplinary and will be open to students with units of study developed by the several colleges in the University. It is designed to introduce students to the complexities and the interrelationships of life science, physical science, historical, geographical, economic, societal, philosophical, aesthetic, engineering, educational, and health issues of our global environment.

126. Honors: New Portal to Appreciating Our Global Environment. Open only to students in the Honors College. Offered in the first year only. Lecture 1 hour; discussion sections 2 hours; 3 credits. Required for all first-year and transfer students with fewer than 12 transfer credits. This course is multidisciplinary and will be open to students with units of study developed by the several colleges in the University. It is designed to introduce students to the complexities and the interrelationships of life science, physical science, historical, geographical, economic, societal, philosophical, aesthetic, engineering, educational, and health issues of our global environment.

103. Cultural Geography. Lecture and discussion 3 hours; 3 credits. This course provides a basic topical introduction to human and cultural geography. It focuses on the diversity of human societies, their distribution, characteristics, and cultural impact on the landscape. Topics include the geography of population, migration, language, religion, economic development, urbanization, resources, and the political landscape.

101S. Environmental Geography. Lecture and discussion 3 hours; 3 credits. This course provides a basic topical introduction to human and cultural geography. It focuses on the diversity of human societies, their distribution, characteristics, and cultural impact on the landscape. Topics include the geography of population, migration, language, religion, economic development, urbanization, resources, and the political landscape.

102S. Honors: Cultural Geography. Lecture 3 hours; 3 credits. Open only to Honors College. A special honors section of GEOG 100S.

250. World Regional Geography. Lecture and discussion 3 hours; 3 credits. A study of the physical and cultural characteristics of the major geographical regions of the world. The course focuses upon significant problems within each of the world’s major regions and examines the relevance of the geographical background to these problems.

300. Maps and Geographic Information. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: GEOG 100S or 101S. An introduction to the use of geographic information systems and an introduction to GIS-based remote sensing imagery.

355. Topics in Regional Geography. Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors.

400W/500. Seminar in Geography. Lecture and discussion 3 hours; 3 credits. Prerequisite: GEOG 100S or 101S, or permission of the instructor. Advanced study of a specialized topic in geography. The topic of the choice may vary according to the availability of faculty expertise and current geographic interest.

401/501. America in an Interdependent World. Lecture 3 hours; 3 credits. Prerequisites: junior standing and six credits in the social science perspective or permission of the instructor. An examination of the interdependence of the world's people and the view of the United States in an interdependent world. Topics include energy, resources, human rights, and international organizations are considered.

402/502. Geographic Information Systems. Lecture 3 hours; 3 credits. Prerequisites: GEOG 100S or 101S, or permission of the instructor. An introduction to GIS. A study of the conceptual basis of GIS as a tool for manipulating spatial information. The course focuses on the student's role in understanding the ways and means of organizing data within the framework of a GIS. Students will work on a comprehensive GIS project applying understanding of spatial database structures and analytical operations.

404/504. Digital Techniques for Remote Sensing. Lecture 3 hours; 3 credits. Prerequisite: junior standing or
405W/505. Seminar in International Resource Management. Lecture and discussion 3 hours; 3 credits. Prerequisite: GEOG 309 or permission of the instructor. A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Latin America. 445/555. The Middle East. Lecture and discussion 3 hours; 3 credits. Prerequisites: junior standing and GEOG 100S or 101S, or permission of the instructor. A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Latin America.

446/556. Geography of Southeast Asia. Lecture 3 hours; 3 credits. Prerequisite: GEOG 100S. Analysis of the physical, historical, cultural, economic, environmental, and political patterns and problems of Southeast Asia. The focus is on the diversity of the region and on the nature and impact of development.

450/558. Geography of Virginia. Lecture and discussion 3 hours; 3 credits. Prerequisite: GEOG 100S or 101S, or permission of the instructor. Discussion of specific urban and regional problems based on outside readings and individually selected research topics.

451/51. Urban and Regional Planning. Lecture and discussion 3 hours; 3 credits. Prerequisite: GEOG 100S or 101S, or permission of the instructor. A study of planning concepts and powers used to guide contemporary metropolitan planning and development. Emphasis is on the application of social science principles and methods to the planning process.

412/512. Cities of the World. Lecture and discussion 4 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Examination of cities of the world's major cultural realms with an emphasis on the urban landscape as it varies between the developing and industrialized world. 418. Quantitative Methods. Lecture 3 hours; 3 credits. Pre- or corequisite: STAT 1301 with a grade of C- or better. Prerequisites: GEOG 100S, GEOG 309, or permission of the instructor. A systematic study of the various environmental and cultural factors that play a role in important urban problems. Lectures will be supplemented by a regional analysis of major wine-producing areas of the world.

480W. Senior Seminar in International Studies. Lecture 3 hours; 3 credits. Prerequisite: senior standing in the BAIS degree program or permission of the instructor and the director of the BAIS program. Interdisciplinary research and the preparation of a senior thesis in international studies.

490/590. Applied Cartography/GIS. 1-3 credits. Prerequisites: junior standing or permission of the instructor. Practical experience in applying the principles of cartography and geographic information systems to the design and construction of maps and other graphics. 495/595, 496/596. Topics in Geography. 1-4 each credit. 495/595: Independent study directed under the supervision of the instructor. 496/596: Independent study of geographic techniques for scientific investigation and practical applications. 499W. Senior Thesis. 3 credits. Prerequisites: GEOG 308 and senior standing in Geography. Completion of a research paper supervised by a faculty member from the Geography program. Research topic to be selected in concert with the faculty supervisor and a final written report required.

605. Advanced Seminar in International Resource Management. Lecture and discussion 3 hours; 3 credits. An intensive study of several international resource use issues.

620. Seminar in Political Geography. Lecture and discussion 3 hours; 3 credits. A study of the interrelationships of political and geographic phenomena, and theories of geography both of specific topics such as the national integration of states, refugees and resources, and of particular regions. 621. Seminar in Economic Geography. Lecture and discussion 3 hours; 3 credits. An intensive examination of international patterns of production, exchange, consumption, and overall economic development. 625. Ethno-Regionalism. Lecture 3 hours; 3 credits. An examination of the geopolitics of world ethnic minorities with special reference to selected "troubled spots" on the world political map.

629/729. Services for the Aging. Lecture 3 hours; 3 credits. A wide variety of services for older persons are examined. Each service will be studied from the following perspectives: 1) need, 2) assessment, 3) alternative intervention strategies, 4) concepts, and 5) public responses (cross-listed with SOC 713).

712/812. Qualitative Research Methods. Lecture 3 hours; 3 credits. An exploration of qualitative research methods with an emphasis on understanding the nature of research in the social sciences, or permission of the instructor. An examination of the physical and human geography of the coastal zone. Problems of managing coastal resources with an emphasis on North America.

714/814. Theory in the Health Sciences. Lecture 3 hours; 3 credits. Designs, methodologies, and theories used to provide health services to urban populations. Strategies that are useful in assessing urban needs will be discussed along with public and private urban health care regulation and responsibility issues. 718/818. Epidemicology. Lecture 3 hours; 3 credits. Prerequisites: appropriate course work in the social sciences, or permission of the instructor. An examination of the physical and human geography of the coastal zone. Problems of managing coastal resources with an emphasis on North America.

746/846. Epidemiology. Lecture 3 hours; 3 credits. An examination of the geopolitics of world ethnic minorities with special reference to selected “troubled spots” on the world political map.
the current issues confronting higher education in general as well as the unique problems of the health professions in higher education. It is a course for students who wish to develop the skills needed to carry out research programs, as well as those involving licensure and registration in relationship to accreditation, will also be explored.

755/855. Curriculum Design in the Health Professions. Lecture 3 hours; 3 credits. This advanced course in curriculum development focuses on the development, implementation, and role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

770/870. Management in Urban Health Services. Lecture 3 hours; 3 credits. This course is designed for students who are interested in studying the management of health care organizations effective management and the urban context. This course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

780. Management of Urban Health Services. Lecture 3 hours; 3 credits. This course is intended to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

785/885. Topics in Health Services. 1-3 credits. Prerequisites: Permission of the program director. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

795/895. Research Perspectives. Lecture 3 hours; 3 credits. Prerequisites: Permission of the program director. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

800. Urban Trends and Issues: A Research Perspective. Lecture 3 hours; 3 credits. Examines trends and issues associated with an understanding of the urban environment and the development of urban health care and the education of health professionals.

870/876. International Health. Lecture 3 hours; 3 credits. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

887. Legal Aspects of Health Services. Lecture 3 hours; 3 credits. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

887/897. Comprehensive Health Planning. Lecture 3 hours; 3 credits. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.

899. Dissertation. 1-3 credits. Prerequisites: Consent of the program director. This course is designed to present a broad overview of how the health care industry is affected by the development and the role of the curriculum in the health professions. The course will provide an opportunity to study independently or in small groups and investigate specific topics of current interest in the health services.
History — HIST

301. Historical Methodology. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. An introduction to the methods of the historian. Emphasis will be given to the sources, the techniques of research and the commentaries used in the historical disciplines.

310. Renaissance Europe. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Europe from the fourteenth to the sixteenth centuries. The development of the Renaissance in both Italy and Northern Europe and its impact on the culture of the period.

311. Early Middle Ages. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. An examination of the Renaissance in both Italy and Northern Europe and its impact on the culture of the period.

312. Thirty Years' War. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The Thirty Years' War and its impact on the political, cultural, and social development of Europe.

313. Revolution and the Rise of Modern Europe. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The development of the modern European nation-state and its impact on the cultural, social, and political development of Europe.

314. The French Revolution. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The French Revolution and its impact on the political, cultural, and social development of Europe.

315. Age of Imperialism: Europe, 1880-1918. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The development of the modern European nation-state and its impact on the cultural, social, and political development of Europe.

316. Cold War History. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The development of the modern European nation-state and its impact on the cultural, social, and political development of Europe.

320. History of the Old South. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the American South from the colonial era to the end of the Civil War.

321. History of the New South. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the American South from the Civil War to the present.

322. History of Southern Europe. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Southern Europe from the ancient Roman period to the present.

323. History of Latin America. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Latin America from the pre-Columbian era to the present.

324. History of the Caribbean. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the Caribbean from the pre-Columbian era to the present.

325. History of Africa. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Africa from the pre-Columbian era to the present.

326. History of Asia. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Asia from the pre-Columbian era to the present.

327. History of the Far East. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the Far East from the pre-Columbian era to the present.

328. History of the Middle East. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the Middle East from the pre-Columbian era to the present.

329. History of the Far East. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the Far East from the pre-Columbian era to the present.

330. History of the Middle East. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the Middle East from the pre-Columbian era to the present.

331. Colonialism and Nationalism in Southeast Asia. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of Southeast Asia from the pre-Columbian era to the present.

332. South Asia Since Independence. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of South Asia since independence from British rule.

333. The United States in the 1960s. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the United States from the end of World War II to the present.

334. American History to 1877. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. An introduction to American history from the pre-Columbian era to the end of Reconstruction.

335. American History from 1877. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. An introduction to American history from the end of Reconstruction to the present.

336. The United States in the 1960s. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. The history of the United States from the end of World War II to the present.
Examines experiences of women in U.S. history from 1607 to the present, paying particular attention to influences of race, class, ethnicity, and age. 49/596.* History of American Thought: The American Experience from 1492 to the Present. Lecture 3 hours; 3 credits. Prerequisite: HIST 101H, 102H, 103H, 104H or 105H. Examines the historical development and background of contemporary issues involving women/minorities/non-Western world. Specific courses under this category will be described in a booklet distributed to academic advisors and will be listed in each semester's registration book. 606. Studies in American Diplomatic History. Seminar; 3 credits. 612. Studies in the History of the South. Seminar; 3 credits. 634. Studies in the History of Military Affairs, Seminar;
3 credits.

637. Studies in War and the Humanities, Lecture 3 hours; 3 credits. The impact of war on society, literature and the arts.

640. Studies in East Asian History, Seminar; 3 credits.


650. Studies in Ancient History, Seminar; 3 credits.

652. Studies in Medieval History, Seminar; 3 credits.

654. Studies in European History, 1350-1600, Seminar; 3 credits.

656. Studies in European History, 1600-1815, Seminar; 3 credits.


668. Internships in History, Seminar; 3 credits. Minimum 200 hours in professional settings. A grade of C or better is required.

695. Topics in History, 1-3 credits.

697. Tutorials in History, 1-3 credits. Individually arranged with appropriate professor and with the permission of the graduate program director.


733. Seminar in Intelligence-International Relations, 1914-1945, Lecture 3 hours; 3 credits. Prerequisite: permission of the graduate program director. An examination of the cultural, political, and intellectual dimensions of intelligence operations during the rise of militiam in Europe and East Asia after World War I. The influence of cryptographic intelligence will be emphasized while investigating the formulation and conduct of foreign policy of major nations in the inter-war years and of the warring powers after 1939.

761. Special Topics in International Studies, 3 credits. The advanced historical study of selected topics in international studies.

Honors — HNSV

387. Honors Tutorial I, 1 credit each semester. Prerequisite: credit in the Honors college. A required course for Honors College students with junior standing. Under the direction of an Academic Honors College faculty member, the student works within an experiential framework on a project that is outside the student's major.

387. Honors Honors Colloquium, 3 credits. Prerequisite: senior standing in the Honors college, or permission of the dean. A required course for Honors College students in their final year of study. In this interdisciplinary seminar, the goal is to integrate the general education experience with each student's major.

Human Services — HNSV

339. Interpersonal Relations, Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Students will learn the theory and practice of interpersonal relationships. Development of skills necessary for effective communication will be stressed. A grade of C or better is required.

341. Introduction to Human Services, Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Students will learn the theory and practice of human service work. Students will be exposed to local and state human services facilities. A grade of C or better is required.

342. Research and Evaluation, Lecture 3 hours; 3 credits. Corequisite: HNSV 341. Prerequisite: MATH 101M or 102M or STAT 130M. An introductory course on research methods. Students will learn how to interpret research and how to apply research findings to practical situations in human services.

343. Human Services Methods, Lecture 3 hours; 3 credits. Corequisite: HNSV 341. Prerequisite: junior standing or permission of the instructor. Presents theories and techniques used by human service workers in a variety of settings. Focuses on career development throughout the life span with emphasis on vocational theories, interventions, assessments, and socioeconomic factors.

344. Career Development and Appraisal, Lecture 3 hours; 3 credits. Corequisite: HNSV 341. Prerequisite: junior standing or permission of the instructor. Focuses on career development throughout the life span with emphasis on vocational theories, interventions, assessments, and socioeconomic factors.

346. Diversity Issues in Human Services, Lecture 3 hours; 3 credits. Prerequisite: HNSV 341. This course serves as an introduction to multicultural helping. The influence of socio-identities (e.g., race, ethnicity, religion, gender, socioeconomic status, sexual orientation) on individuals, functioning, concerns, and the helping process will be explored.

386. Field Observation in Human Services, Lecture 3 hours; 3 credits. Corequisite: HNSV 339, 341, 342, 343, and 346. Students will visit and examine human services systems such as mental health, substance abuse, criminal justice, and social services. They will study how various agencies and professionals associate to facilitate decision-making in selecting an internship and to gain a complex understanding of the role of human services professionals. A grade of C or better is required.

440W/440. Program Development, Implementation, and Practice, Lecture 3 hours; 3 credits. Prerequisites: HNSV 341, 342, 344, 346, and 368. This course presents models and practices of developing, implementing, and evaluating human services programs. The course includes an introduction to grant writing and fund raising.

444/544. Psycho-educational Groups, Lecture 3 hours; 3 credits. Prerequisites: HNSV 341 and 342, 343. This course combines lectures and experiential learning about psychological and educational groups. Principles and practices for developing and leading psycho-educational groups will be covered.

447/547. Addictions: Theory and Intervention, Lecture and discussion 3 hours; 3 credits. Prerequisites: HNSV 341 and 342 in human services. This course examines the etiology, risk factors and treatment of alcoholism and other addictions.

446. Interventions and Advocacy with Children, Lecture 3 hours; 3 credits. Prerequisites: HNSV 341 and 12 hours in human services. This course provides an overview of how human service workers assist children in a variety of settings. Emphasis will be placed upon advocacy, supportive work, and short term crisis intervention.

450/550. Addictions: Assessment and Treatment Practicum, Lecture 3 hours; 3 credits. Prerequisites: HNSV 447 and 12 hours of Human Services courses or permission of instructor. Examines the diagnostic criteria for substance use disorders as well as other mental health disorders often seen in substance abusing populations. Provides a systemic approach to screening assessment and treatment planning.

451/551. Loss, Grief and Growth, Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course offers a study of loss and grief and development of the ability to help those who have experienced loss. Growth through the experience of loss is emphasized.

454/554. Principles and Practices of Vocational Rehabilitation, Lecture 3 hours; 3 credits. Prerequisites: HNSV 343, 344, 440W, and 454. This course provides basic information on the disability law and worker’s compensation. Fundamentals of vocational rehabilitation will also be presented.

455/555. Assessment and Placement Techniques in Vocational Rehabilitation, Lecture 3 hours; 3 credits. Prerequisites: HNSV 343, 344, 440W, and 454. This course emphasizes tests, behavioral assessment and observational techniques used to evaluate vocational rehabilitation clients.

456/556. Diversity Experience in Ireland, 3 credits. Prerequisite: HNSV 341 or permission of instructor. This course is designed for students to experience the cultural similarities and differences in approaches to social conflict and other social problems in the United States and Ireland. Students will become familiar with the social issues that are common to both countries. Students will be expected to become coinsiderable in the structure of the Irish political system and current events. This course will serve as an introduction to Missouri’s home in Ireland. The influence of social-identities (e.g. race, ethnicity, religion, gender, socioeconomic status, sexual orientation) on individuals’ functioning, concerns, and the helping process will be explored.

468. Internship in Human Services, 12 credits. Prerequisites: HNSV 341 and 342. This course is designed for students to observe and experience first-hand the roles of the human service professional. A grade of C or better is required.

490. Field Observation in Human Services, 3 credits. Corequisites: HNSV 341 and junior standing. This course provides a study of the family as a system and an introduction to a variety of issues confronting the family, including child abuse, child neglect, and other more than usual stress in the family. Available community resources for helping families will be examined.

495. Topics in Human Services, 1-6 credits. Prerequisite: senior standing or permission of the instructor. The study of selected topics in human services.

Humanities — HUM

Professor D. A. Heller (Director of the Institute of Humanities). Assistant Professor J.P. Jones.

601. The Subject of the Humanities: Introduction to Research, Methodology, and Critical Theory, Lecture 3 hours; 3 credits. An introduction to the basic elements of humanities research, methodology, and critical approaches. The course will expand students’ research skills, provide a survey of current methodological approaches, and consider fundamental theoretical questions.

602. The Humanities on Trial: Postmodernity, Technology, Globalization, Lecture 3 hours; 3 credits. Readings and discussion will focus on the transformation of the humanities in the age of postmodernity, postnationalism, and technology. In addition, the further development of strong research and critical thinking skills will be emphasized.

688. Internship, 3 credits. This course allows graduate students to work in a humanities internship. Requirement: a two-week work experience in a field relevant to a student’s course of study. Students will work with a supervisor at the work site and a faculty mentor. Internship hours are pass/fail grading only.

694. Interdisciplinarity and the Humanities: Theory and Practice, Lecture/seminar 3 hours; 3 credits. Prerequisites: HUM 601, 602. The capstone seminar for non-theory humanities students. The seminar provides a forum in which to discuss contemporary theories and questions concerning interdisciplinary humanities research. Students will also develop and complete a research paper which reflects their own interdisciplinary programs of study.

696. Social Topics in Humanities, 1-3 credits. Prerequisite: permission of the instructor. Appropriate advanced study of small groups on special topics selected under the direction of an instructor. Conferences and papers as appropriate.

697. Tutorial Work in Humanities, 1-3 credits. Independent study under the direction of an instructor on a topic to be selected.

Information Technology/Decision Sciences

Associate Professor W.H. Crouch (Chair of the Department of Information Technology and Decision Sciences and Graduate Program Director for Joint Master's Program with Computer Science). Professors A. Ardalan (Associate Dean of the College of Business and Public Administration), L. D. Xu, C.A. Markowski (Decision Sciences Coordinator), and E.P. Markowski, Associates Professors S.F. Crowe, D. Cook, F.W. Granger 1, X. Li, J. E. Mann, G.S. Rhiel, and M. Wermus. Instructors D. Copeland, S. Davis, R. Geyer, R. K. Malikah, K. Strozak, E. J. Woroch, and J. Watson. Assistant Professors S. F. Crowe, R.A. Geyer, and R. F. Ardalan (Chief Department Advisor), V. Kalburg and R. A. Weather.
600. Statistics for Business and Economics. Lecture and discussion 3 hours; 3 credits. Descriptive statistics, probability and probability distributions, estimation and hypothesis testing, regression and correlation, and time series analysis. Credit is not given for both MTH 201 and 210, or both IT 191T and 201T. Prerequisite: IT 210 or CS 150, DSCI 206 and DSCI 306. Computer simulation, statistical analysis, and data mining techniques utilized in development of system models that are commonly encountered in business research. Topics include confirmatory factor analysis as well as structural equation modeling. Case studies of advanced statistical models used in business research. 711/811. Multivariate Statistical Methods for Business. Lecture and discussion 3 hours; 3 credits. Prerequisite: DSCI 307 or permission of the instructor. An applied study of statistical methods including analysis of variance, ANCOVA, multiple regression, exploratory factor analysis and data analysis. Data analyzed using a computerized statistical package. Emphasizes development of student's ability to use statistical software to analyze realistic business-oriented data sets.

726/826. Decision Sciences Internship. Lecture 3 hours; 3 credits. Available for pass/fail grading only. Available for pass/fail grading only. Prerequisite: permission of the department. Advanced design and implementation of data management and database systems. Topics include: abstraction, encapsulation, inheritance, polymorphism, persistence, and dynamic binding.

452W. Information Systems for International Business. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 310 or IT 311. Introduction to international information systems. Topics include: network directory services, domain structures, active directory, and group policies and certificates.

430W. Object-Oriented Programming with JAVA. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 310 or CS 250. An introduction to JAVA as an object-oriented language used to write JAVA applets and e-commerce applications. Key concepts include: abstraction, encapsulation, inheritance, polymorphism, persistence, and dynamic binding.
structure, object management, and control of user access.

452. Database Backup and Recovery in a Networked Environment. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 451. Introduction to database backup and recovery. Tools include: database backup, archiving strategies, system recovery, database networking and client/server deployment.

453. Database Deployment and Performance Tuning. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 451. Examines techniques and methodologies that are used to implement an efficient, secure, and high-performance database applications.

461. Implementing Internet Applications. Lecture and discussion 3 hours; 3 credits. Prerequisite: CS 250 or IT 310. Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security.

464. Project Management in Information Systems. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a “C” or better; IT 310 and 361. This course focuses on project management techniques and methodologies that can be utilized in Information Technology software and systems projects.

473. Systems Design and Implementation. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a “C” or better; IT 310 and 361. A case-study-based presentation of system life cycle phases subsequent to systems analysis and design. The student will utilize Computer-Aided Systems Engineering (CASE) tools to design logical and physical models to define business requirements. Factors relevant to the use of CASE tools in the development of large complex systems through development and implementation will be examined in detail. Topics include: rational unified process, structured analysis, and design-based methodologies, project management, feasibility analysis, database design, on-line system design, prototyping, developing, testing, and implementation and enterprise-wide training strategies. Students, potentially working in teams, are expected to apply these design strategies to industry case studies, resulting in new and comprehensive system designs, the results of which will be delivered in formal presentation format in a classroom setting. (qualifies as a CAP experience)

495. Selected Topics in Information Systems. 3 credits. Prerequisite: permission of the department. Taught on an occasional basis. Course schedule for the particular topic being taught each semester.

497. Independent Study in Information Systems. 1-3 credits. Prerequisite: permission of the department. Allows students the opportunity to undertake independent study under the direction of a faculty member.

610. Information Technology Management. Lecture 3 hours; 3 credits. Prerequisite: ACC 601. Corequisite: MGMT 602. Information systems are introduced, illustrating both the technical and behavioral perspectives emphasizing awareness of the managerial, organizational, and technological dimensions. The role of information systems in decision making and planning is examined.

612. Knowledge-Based Systems. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 610 or equivalent; or permission of the department. Introduction to Artificial Intelligence techniques and neural network paradigm. Topics include: propositional logic, natural language, rule-based systems, heuristic search, knowledge representation. Application development techniques and client/server tools are used for the construction of expert systems.

620. Systems Analysis and Design. Lecture 3 hours; 3 credits. Prerequisite: IT 610 or equivalent; or permission of the department. Introduction to the design and development of computer-based systems. This course is designed to provide individuals with a systematic approach to the development of computer-based systems.

624. Information Technology Assurance Services. Lecture and discussion 3 hours; 3 credits. Prerequisite: ACCT 601 or equivalent. Standards, ethics, and practice of information technology assurance services are presented as it concerns the governance and control of information systems. (cross listed with ACCT 624)

625. Information International Business. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 610 or equivalent; or permission of the department. Examination of the global environment and the global organization. Issues related to information infrastructures for the organization, nation and the world will be covered. Students will examine the global environment and the global organization. (qualifies as a CAP experience)

635. Telecommunication and E-Commerce. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 620 or equivalent; or permission of the department. Examines the impact of electronic commerce and telecommunications in the business world. This comprehensive introduction to the use of the Internet to effectively exploit the Internet’s resources for business applications.

639. Strategic Information Systems. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 650 or permission of the department. Introduces the fundamentals of information systems security, emphasizing security policy, risk management, cryptography and network security.

651. Data Warehousing and Mining. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 650 or permission of the department. Introduction to data warehousing and mining. Examines techniques used to extract data patterns and relationships from operational and historical data.

652. On-Line Analytical Processing (OLAP). Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 650 or permission of the department. Introduces to Online Analytical Processing and the use of multidimensional techniques and tools to extract information from data warehouses and marts.

660. Advanced Computer-Based Information Systems. Lecture 3 hours; 3 credits. Prerequisite: IT 610. Introduces the fundamentals of preparing information systems for the modern business, industry and government. Conceptual foundations, system life cycle, system planning, structure and development cycle of information systems for business functions. The management and economics of business information systems are examined.

661. Implementing Internet Applications. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 610 or equivalent; prior programming experience; or permission of the department. Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security.

664. Information Systems Project Management. Lecture 3 hours; 3 credits. Prerequisite: IT 620 or equivalent; or permission of the department. A practical examination of the various factors which affect the success of information systems (IS) projects. Managerial issues addressed include: user management, IS team management, budgeting and scheduling configuration management, presentations, product acquisition, conversion management, expectation/ scope management, and quality management. Students working in teams are expected to complete case-study based projects which exercise the aforementioned management techniques.

665. Network and Information Systems Administration. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 632 or equivalent; prior programming experience; or permission of the department. Modeling of information architectures for business. High-level modeling methodologies. Implications for database administration.

667. Cooperative Education. 1-3 credits. Prerequisite: IT 620 or equivalent. Prerequisite: IT 620 or equivalent; prior programming experience; or permission of the department. Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security.

668. Information Systems Internship. 1-3 credits. Prerequisite: IT 620 or equivalent. Prerequisite: IT 620 or equivalent; prior programming experience; or permission of the department. Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security.

669. Project and Information Systems Administration. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 650 or permission of the department. Introduces the fundamentals of information systems security, emphasizing security policy, risk management, cryptography and network security.

672. Information Architectures. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 620 or equivalent; or permission of the department. Examines the impact of electronic commerce and telecommunications in the business world. This comprehensive introduction to the use of the Internet to effectively exploit the Internet’s resources for business applications.

673. Object-Oriented Analysis, Modeling, and Design. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 525 and permission of the department. Examines the fundamental aspects of object-oriented development and design.

674. Strategic Information Systems. Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 620 or equivalent; or permission of the department. Examines the impact of electronic commerce and telecommunications in the business world. This comprehensive introduction to the use of the Internet to effectively exploit the Internet’s resources for business applications.

695. Selected Topics in Information Systems. 3 credits. Prerequisite: permission of the department chair and the graduate program director.

697. Independent Study in Information Systems. 1-3 credits. Prerequisite: IT 650 or permission of the department.

699. Master’s Project in Information Systems. 3 credits. Prerequisites: IT 650 and permission of the department.

795/895. Selected Topics in Management Information Systems. 3 credits. Prerequisite: permission of the department chair and the graduate program director.

Operations Management — OPMT

303T. Operations Management and Technology. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the chief departmental advisor. Examines strategic, tactical and operational issues in the planning and control of manufacturing and service delivery systems. Topics include process design, capacity and materials planning and control, inventory management, scheduling, quality management, facility layout, and work management. Emphasizes technological advances in operations and their economic and social impact.

367. Cooperative Education. 1-3 credits. Prerequisite: junior standing or permission of the chief departmental advisor. Examines strategic, tactical and operational issues in the planning and control of manufacturing and service delivery systems. Topics include process design, capacity and materials planning and control, inventory management, scheduling, quality management, facility layout, and work management. Emphasizes technological advances in operations and their economic and social impact.

389. Practicum. 1-3 credits. Prerequisites: OPMT 303T or 387 and junior standing or permission of the Department Chair and the Management Information Systems chief advisor. Approval for enrollment and allowable credits are determined by the department and Career Management Center in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience)

430/530. Purchasing Management. Lecture and discussion 3 hours; 3 credits. Prerequisite: OPMT 303T or 387 for 430 and OPMT 611 for 530. An overview of the purchasing function and its role in the supply chain. Topics include source decisions, price/cost analysis, quality issues, purchasing, information systems, legal and ethical issues, and evaluation of services.

431/531. Planning and Control Systems. Lecture and discussion 3 hours; 3 credits. Prerequisites: OPMT 303T or 387 for 431 and OPMT 611 for 531. Examines various models and planning techniques in a production and inventory management system. Topics include aggregate planning, master scheduling, capacity planning, MRP, and demand management.

432/532. Forecasting, Inventory, and Quality Management Systems. Lecture and discussion 3 hours; 3 credits. Prerequisites: OPMT 303T or DSCI 306 or 387 for 432 and OPMT 611 and DSCI 600 for 532. Study of inventory, forecasting, and MRP systems and their role in the supply chain. Topics include lead times, insurance, and ethical issues, and evaluation of services.

434/534. International Business. Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 525 or 387, or OPMT 534. Examines the impact of electronic commerce and telecommunications in the business world. This comprehensive introduction to the use of the Internet to effectively exploit the Internet’s resources for business applications.

479. Independent Study in Information Systems. 1-3 credits. Prerequisite: permission of the department chair and the graduate program director.

497. Independent Study in Operations Management. 1-3 credits. Prerequisite: permission of the department chair and the graduate program director.
611. Operations Management with Quantitative Analysis. Lecture 3 hours; 3 credits. Prerequisites: DSCI 600, Introduction to Quantitative Methods. This course provides an overview of the decision-making process and the techniques that are used in operations management. It covers the use of statistical methods to perform predictive and descriptive analysis. Students will learn how to use statistical software to analyze data and make decisions concerning pricing, forecasting, production, inventory, and quality control processes. The course includes business applications of statistical methods and concepts for decision making.

624. Managing Services. Lecture 3 hours; 3 credits. Prerequisites: Managerial Economics, Business Intelligence, and Performance Management. This course helps students to develop an understanding of the critical issues influencing the success of the service business environment. The course will examine various areas of contemporary service management, including customer relationship management, service operations, and service delivery systems. Students will learn the tools and strategies needed to manage and deliver high-quality service experiences.

668. Operations Management Internship. 1-3 credits. Prerequisite: graduate standing. Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment.

695. Selected Topics in Operations Management. 3 credits. Offered Fall, Spring, and Summer semester. Allows students the opportunity to explore in depth a topic of special interest.

705/805. The Euro-Atlantic Community. Seminar 3 hours; 3 credits. This course examines the development of the European Union and the role of the United States in the transatlantic relationship. It is designed to prepare students to understand the challenges and opportunities of a new strategic partnership.

707/807. International and Transnationalism. Seminar 3 hours; 3 credits. This course explores the historical and contemporary developments of the international system, focusing on the role of transnational actors and processes. It examines the impact of globalization and the shifting role of states in the international system.

International Studies - IDS
R.E. Olander (Director of Interdisciplinary Teacher Preparation) and L.X. Lombardo (Coordinator of Individualized Interdisciplinary Program)
300W. Interdisciplinary Theory and Concepts. Lecture and discussion 3 hours; 3 credits. Corequisites: ENGL 111C, PHIL 111C or HIST 111C. Prerequisite: ENG C 110C. An examination of the history, concepts and application of interdisciplinary studies. Includes an examination of similarities and differences among academic disciplines and the application of interdisciplinary approaches to a specific topic of study.

305. International Studies Courses

International Business - INBU

367. Cooperative Education. 1-3 credits. May be repeated for credit. Prerequisite: approval by the department and Career Management, in accordance with the policy for granting credits in Cooperative Education. Available for pass/fail grading only. Student participation (credit based on academic relevance of the work experience, criteria, and evaluative procedures) as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (Qualifies as a CAP Experience)

368. Internship in Interdisciplinary Studies. 1-3 credits. Prerequisite: junior standing and permission of the department. Upper-level studies program coordinator. An opportunity to integrate service and applied learning experience with interdisciplinary perspectives.

487. 498. 598. Internship Seminar. Lecture and discussion 1 hour; 1 credit each semester. Prerequisites: IDS 300W, an approved curriculum plan and permission of the instructor and student. Students participate and present related topics to their projects. Common problems and interdisciplinary issues are investigated.

495. 496. Topics in Interdisciplinary Studies. Lecture 3 hours; 3 credits. Prerequisite: IDS 300W. Focused study of selected topics linking perspectives, research, and applications from a variety of disciplines. Emphasis is on disciplinary synthesis.

497. 498. Senior Project. A total of 3 or 6 credits over one or two semesters. Prerequisites: IDS 300W, permission of the instructor and an approved IDS curriculum plan. This course is a vehicle for the execution of the senior project. Prerequisites: IDS 300W, an approved curriculum plan and permission of the instructor and student. Students participate and present related topics to their projects.

International Business - INBU

367. Cooperative Education. 1-3 credits. May be repeated for credit. Prerequisites: approval by IB student advisor and Career Management. Focus on providing the student with real-world experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only (qualifies as a CAP experience)

368. Internship in International Business. 1-3 credits. Prerequisites: approval by IB student advisor and Career Management. Supervised experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only (qualifies as a CAP experience).

381. Doing Business in Europe. Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor. A survey course to provide an overview of the contemporary business environment in Europe, with a focus on the European Union. Topics will include: European Union, business environment, national and international, economic, and financial opportunities for foreign firms in Europe.

382. Doing Business in Latin America. Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor. A survey course to provide an overview of the contemporary business environment in Latin America, including the economic, political, and social-economic forces which affect business in Latin America.

383. Doing Business in Asia. Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor. An analysis of business processes and operations in the major markets, with an emphasis on the relations, business strategy, structure, organizational processes, and human resource management.

384. International Trade Case Study. Lecture 3 hours; 3 credits. Prerequisites: ECON 450, MKTG 411, FIN 435 or MGMT 361, or permission of the instructor. An applied field research study to develop an export trade plan which involves market analysis, risk analysis, financing and distribution decisions in overseas markets. (Qualifies as a CAP experience)

400. International Business Operations. Lecture 3 hours; 3 credits. Prerequisites: ECON 450, MKTG 411, FIN 435, MGMT 311 or permission of the instructor. A capstone course to integrate and apply the theories and concepts learned in required international business courses to the operations of international business and its members.

483. International Business Seminar Abroad. Lecture and discussion 3 hours; 3 credits. Prerequisite: permission of the instructor and student. This seminar provides an opportunity for a foreign university, including lectures on international business topics and visits to international firms and economic/business environment work concepts.

495. 496. Topics in International Business. Lecture and discussion 3 hours; 1-3 credits. Prerequisite: permission of the instructor. An examination of a selected topic that involves individual research and the title of which will appear in the course schedule.

497. Independent Study in International Business. 1-3 credit hours. Prerequisite: permission of the department. Allows students the opportunity to undertake independent study under the direction of a faculty member.

International Studies - IS

Associate Professor K. Taylor Gaubatz (Director of Graduate Programs in International Studies), Professor S.H. Sefertfy. Associate Professors F. Adams, J. Chen, M. Hametz, Q. Jin, R. Karp, D. Smith, X. Yang, and S. Yeltiv. Nondegree students must obtain approval of the director before taking a course.

600. Research Methods in International Studies. Lecture 3 hours; 3 credits. Interdisciplinary quantitative techniques applicable to the study of international phenomena.

601. Seminar in International Relations Theory. Lecture 3 hours; 3 credits. An introduction to major theoretical approaches to international relations and foreign policy. A systematic introduction designed to lay a foundation for advanced study of selected topics, the title of which will appear in the course schedule.

602. American Foreign Policy and World Order. Lecture 3 hours; 3 credits. Prerequisite: IS 602. Multivariate regression, causal analysis, and advanced statistical applications.

606. Internship in International Studies. 1-6 credits. Prerequisite: permission of the department. This course provides an opportunity for supervised internship at local, state, national or international level.

609. Topics in International Studies. Lecture 3 hours; 3 credits. This course explores the origins of the Cold War.

610. Chinese Foreign Policy. Seminar 3 hours; 3 credits. This course examines the major foreign policy approaches to the study of International Relations, and the role of China in the global security environment. It is designed to prepare students to understand the challenges and opportunities of a new Chinese policy.

701/801. Global Change and American Foreign Policy. Seminar 3 hours; 3 credits. This research seminar explores the role of the United States in the global context of the 20th century.

702/802. Approaches to Collective Security. Lecture 3 hours; 3 credits. This course explores the origins of the idea of collective security, examines the attempts to organize international security collectively and assesses possibilities and opportunities for collective security arrangements after the Cold War.

703/803. Ethics and International Relations. Lecture 3 hours; 3 credits. This research seminar explores the ethical and moral implications of the international system.

704/804. Latin American Politics. Seminar 3 hours; 3 credits. This course examines Latin American politics from a comparative and historical perspectives. Particular focus is placed on the various manifestations of political authority in the region and the major societal challenges to state power.

705/805. The Euro-Atlantic Community. Seminar 3 hours; 3 credits. An examination of the Euro-Atlantic area as a partial international system since World War II; alignments and patterns of economic and political behavior of the European “community” and the role and attitudes of the United States and leading European states to preserve and strengthen their own national interests and the prospects for a true Euro-Atlantic community that would link the U.S. and Europe.

706/806. The Cold War. Lecture 3 hours; 3 credits. This research seminar will explore the theoretical and empirical literature on the causes of violent conflict between states.

707/807. Interdependence, Power, and Transnationalism. Seminar 3 hours; 3 credits. This course covers the intellectual development of approaches to the study of interdependence and transnationalism, as well as the use of social science collectively and assesses possibilities and the prospects for a true Euro-Atlantic community that would link the U.S. and Europe.

708/808. Doing Business in Europe. Lecture 3 hours; 3 credits. This research seminar will explore the theoretical and empirical literature on the causes of violent conflict between states.
176/816. Theories of Comparative Sociopolitical Studies. Lecture 3 hours; 3 credits. The fundamental goal of the seminar is to prepare students for subsequent coursework and research in the comparative and regional studies track. To achieve this goal, this seminar examines research in comparative politics and political theory. It is designed to introduce students to the major concerns and issues in population and development. To achieve this goal, this seminar provides a critical review of research findings and issues in various areas of population and development.

719/816. Feminist Political Theory. Lecture 3 hours; 3 credits. This seminar focuses on post-Marx China. It examines the fundamental rules, prominent players, and major issues in China over the last 30 years. This seminar will critically examine some of the main critiques of fundamentalist political thought and discuss China's history and current issues.

720/820. Research Seminar in Global Security. Seminar 3 hours; 3 credits. The research seminar investigates the profound changes in international security brought about by the end of the Cold War with a specific focus on the role of nuclear weapons. The primary purpose of this seminar is to promote research into the global aspects of nuclear technology and to enhance understanding of the relationship between nuclear control and the New World Order.

721/821. New World Order: Chaos and Coherence. Seminar 3 hours; 3 credits. The end of the Cold War has ushered in a period of political turbulence and an increasingly complex international landscape. This seminar will examine the major issues and challenges facing the international community in the post-Cold War era.

722/822. Democracy and International Relations. Lecture 3 hours; 3 credits. An examination of the relationship between democratic politics, democratic ideals, and international relations. Subjects covered will include the history of democratic politics, democratic organizations, and their implications for international relations. The distinction between the democratic state and the problems of democracy in global governance will also be discussed.

724/824. Regionalism and International Relations. Lecture 3 hours; 3 credits. An examination of regionalism and international relations. Regionalism is defined as a set of institutions and processes created by states to regulate their interactions. This seminar will focus on the role of regional organizations in the global political system.

751/851. Ethnic Conflict in the Emerging Global Order, Lecture 3 hours; 3 credits. Using different case studies, this course focuses on the relationships between groups with different political, ethnic, and regional identities and the impact of these relationships on the global division of labor and development process of developing countries.

777/877. Globalization and Social Change in the World System. Seminar 3 hours; 3 credits. This course is intended to familiarize students with the characteristics and consequences of globalization. The seminar will focus on a number of critical issues, including the future of democracy, income distribution and ethnic, class, and gender relations.

778/878. Globalization and Social Change in the World System. Seminar 3 hours; 3 credits. This seminar is intended to familiarize students with the characteristics and consequences of globalization. The seminar will focus on a number of critical issues, including the future of democracy, income distribution and ethnic, class, and gender relations.

752/852. Research Seminar in International Studies: Refugees. Seminar 3 hours; 3 credits. This seminar is a graduate-level seminar in refugee studies. The seminar examines the historical, cultural, and political factors that have contributed to the global refugee crisis. The seminar also focuses on the impact of refugee policies on the global political and economic order.

779/879. Topics in International Studies, 1-3 credits. The advanced study and discussion of selected (titled) topics not regularly offered. Prerequisites: permission of the chief departmental advisor. Preparation: students will review coursework and write a thesis proposal. A capstone experience.

779/879. Topics in International Studies, 1-3 credits. The advanced study and discussion of selected (titled) topics not regularly offered. Prerequisites: permission of the chief departmental advisor. Preparation: students will review coursework and write a thesis proposal. A capstone experience.


795/895. Topics in International Studies, 1-3 credits. The advanced study and discussion of selected (titled) topics not regularly offered. Prerequisites: permission of the chief departmental advisor. Preparation: students will review coursework and write a thesis proposal. A capstone experience.

796/896. Selected Topics in International Studies. 1-3 credits. The advanced study and discussion of selected (titled) topics not regularly offered. Prerequisites: permission of the chief departmental advisor. Preparation: students will review coursework and write a thesis proposal. A capstone experience.

866. Internship in International Studies. 1-6 credits. Prerequisites: approval of director. Internship individually arranged at local, state, or international level.

897. Independent Research in International Studies. 1-9 credits. Prerequisites: permission of the director. Independent research directed by professors.

898. Directed Research. 1-9 credits. Prerequisites: approval of director or instructor. Methodological and theoretical preparation designed to assist students in writing a dissertation.

899. Dissertation. 1-9 credits. May be repeated up to 10 credits.

Other curriculum-relevant courses are regularly offered by other departments. For information, consult with the graduate program director.

Jewish Studies — JST

497. Research Project in Jewish Studies. 3 credits. Prerequisites: junior standing, 3 credits of courses in Jewish studies (to include PHIL 350), and approval of the coordinator of Jewish Studies. Independent reading and study of a topic of a student's choice. May be directed by an instructor. Research conference arrangements and research project are required.

Management — MGM

Professors M. Najand (Chair of the Department of Business Administration), P.J. Champagne (Chief Departmental Advisor), K. Chung, S.D. Maurer, and R.B. McAfee. Associate Professors B. Farkas, D.L. Deardrick, S. Li, S.A. Morris and A. Nair. Senior Lecturers J.F. Keeling, Jr.; Instructor J. Keng.

325. Contemporary Organizations and Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: junior standing and MGMT 325 and 360 or permission of the chief departmental advisor. The fundamentals of the managerial process (planning, organizing, leading, and controlling) are considered in the context of the organizational environment. Topics are almost evenly split between macro and micro perspectives.

340. Human Resources Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 340 and permission of the chief departmental advisor. A study of the functional duties associated with personnel/human resource management. Topics include human resource planning, selection, performance appraisal, training, discipline, wage and salary, occupational safety and health, equal employment opportunities, and labor relations.

350. Employee Relations Problems and Practices. Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 350 and permission of the chief departmental advisor. Examines personnel topics such as absenteeism, substance abuse, theft, gambling and counseling problem employees. Policies and practices used by organizations to anticipate and resolve these problems are explored and evaluated.

360. Labor Management Relations. Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 360 and permission of the chief departmental advisor. A study of the relationship between labor and management with emphasis on the creation, structure, and management of new ventures. A recommended elective for business students.

451. Organizational Behavior. Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 350 or 387, MKTG 311 or 387, and ACCT 201, or permission of the chief departmental advisor. An in-depth analysis of current issues facing human resource management such as employee retention, validity in employment testing, assessment centers, sexual harassment, behaviorally anchored performance appraisals, and employment-at-will. HRM implications using the PC, topics are almost evenly split between macro and micro perspectives.

452/552. Organization Development. Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 340, junior standing or permission of the chief departmental advisor. A study of the utilization of organizational development as a tool to address change in organizations. Topics include leadership, team building, action learning, and change processes. Emphasizes the impact of union organization on management practice and effectiveness in both private and public sector organizations.

361. International Business Operations. Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 330 or 387, MKTG 311 or 387 and MGMT 325 or 387, or permission of the chief departmental advisor. An examination of the environment of international business, foreign trade, and the operation of multinational enterprises. Management, marketing, accounting, and financial problems unique to enterprises operating in varying economic, cultural, and political legal environments are investigated. This course includes a CAP experience. (qualifies as a CAP experience)

367. Cooperative Education. 1-3 credits (may be repeated for credit). Prerequisites: MGMT 337 or 387 and approval of the chief departmental advisor. A study tour abroad under the direction of a faculty member including on-site visits and management lectures designed to provide insight into differences in management practices in foreign countries. Offered summers only and when available.

485W. Business Strategy and Policy. Lecture and discussion 3 hours; 3 credits. Corequisite: OPMT 300T or 387. Prerequisites: senior standing, FIN 323 or 387, MGMT 325 or 360, MKTG 311 or 387, and permission of the chief departmental advisor. A capstone course to integrate and apply the concepts learned in required business courses to the development of business strategy and policy-level decisions.

487. Honors: Business Strategy and Policy. Lecture and discussion 3 hours; 3 credits. Prerequisites: senior standing and MGMT 325 or 387, MKTG 311 or 387, and permission of the chief departmental advisor. A capstone course to integrate and apply the concepts learned in required business courses to the development of business strategy and policy-level decisions.

413/513. Compensation Management. Lecture and discussion 3 hours; 3 credits. Prerequisites: senior standing and MGMT 325 and 360 or permission of the chief departmental advisor. A study of wage theory, practice and problems. Topics include compensation theory, job analysis, job evaluation, wage surveys, incentive plans, benefit programs and special features of compensation for sales, managerial, professional, and public employees.

414/514. Collective Bargaining. Lecture and discussion 3 hours; 3 credits. Prerequisites: junior standing and MGMT 325 and 360 or permission of the chief departmental advisor. An analysis of how the federal and state governments may regulate the employer-employee relationship. Topics include labor relations law, equal employment opportunity law, other current statutory employment law and common law employment law.

418. Advanced Human Resources Management: Contemporary Issues. Lecture and discussion 3 hours; 3 credits. Prerequisites: junior standing and MGMT 325 or 387 or permission of the chief departmental advisor. An in-depth analysis of current issues facing human resource management. Topics include employee retention, validity in employment testing, assessment centers, sexual harassment, behaviorally anchored performance appraisals, and employment-at-will. HRM implications using the PC, topics are almost evenly split between macro and micro perspectives.

426. Entrepreneurship: New Ventures Creation. Lecture 3 hours; 3 credits. Prerequisites: MGMT 325 or 387, MKTG 311 or 387, and ACCT 201, or permission of the chief departmental advisor. An in-depth analysis of current issues facing human resource management. Topics include employee retention, validity in employment testing, assessment centers, sexual harassment, behaviorally anchored performance appraisals, and employment-at-will. HRM implications using the PC, topics are almost evenly split between macro and micro perspectives.
in Business Administration.

495/595. Selected Topics in Management. 3 credits. Prerequisite: permission of the chief departmental advisor/graduate program director. Designed to provide advanced students in management an opportunity to study advanced and highly specialized areas under the guidance of a faculty member.

497. Independent Study in Management. 3 credits. Prerequisite: permission of the chief departmental advisor. Designed to provide advanced students in management an opportunity for independent study of selected areas under the guidance of a faculty member.

602. Organizational Management. Lecture 3 hours; 3 credits. Examines issues and principles in the management of individuals, groups, and organizations. Topics include motivation and rewards, groups dynamics and team building, organization design and change.

618. Issues in Human Resource Management. Lecture 3 hours; 3 credits. Prerequisite: MGMT 602 or permission of the instructor. An analysis and evaluation of current human resource practices and problems. Examines topics such as human resource planning, selection, development, and compensation.

630. Motivation and Incentives. Lecture 3 hours; 3 credits. Prerequisite: MGMT 602 or permission of the instructor. This course addresses how managers and organizations can enhance employee productivity and job satisfaction in a competitive global environment. Both the theories and practices of motivation and quality-of-work life will be examined.

631. Organizational Power and Politics. Lecture 3 hours; 3 credits. Prerequisite: MGMT 602 or permission of the instructor. This course examines the issues of power, influence, and politics in the design and execution of management in various organizations and functions. Emphasis is given to the impact of power and politics at various organizational levels. The focus of the course is on the constructive use of power and the problems associated with changes in management power structures.

634. Contemporary Employment Issues and Conflicts. Lecture 3 hours; 3 credits. Prerequisite: MGMT 602 or permission of the instructor. This course explores employment issues faced in the economic and social environment of the contemporary workplace, applying theories, concepts, and management techniques in a business setting.

655. Selected Topics in Management. 1-3 credits. Prerequisite: permission of the department chair and the graduate program director. Study designed for students who have one or more of the required courses waived, or for students desiring additional work in an area of particular interest in management.

710. International Business. Lecture 3 hours; 3 credits. Prerequisite: MGMT 602. An analysis of the management, marketing, accounting, and financial problems unique to enterprises involved in global trade or affected by multinational business operations.

712/812. Comparative Management: A Cross Cultural Study. Lecture, 3 hours; 3 credits. Prerequisite: MGMT 602 for 712; doctoral standing or permission of the instructor for 812. An analysis of cultural influences on employee behavior, work habits, indemnification, and managerial practices in different countries. Emphasis will be placed on research and theoretical understanding.

715/815. Asian Management. Lecture 3 hours; 3 credits. Prerequisite: MGMT 710, BUSN 800 or permission of the instructor. An analysis of the management practices of selected Asian countries, including Japan, Korea, and China. Topics include business-government relations, industrial policies, corporate goals, strategies, strategic alliances, government policies, and labor-management relations. Theories and research issues related to these topics will be emphasized.

721/821. International Strategic Management. Lecture 3 hours; 3 credits. Prerequisite: MGMT 710 or BUSN 800 or permission of the instructor. This course deals with various strategic choices and opportunities available to multinational and international organizations. Topics include international business strategy, global trade, and management in selected countries. Emphasis is given to the nature of the problems and opportunities encountered by multinational organizations.

750. Business Policy and Strategy. Lecture 3 hours; 3 credits. Prerequisite: permission of the Graduate program director. A capstone integrative course on strategy formulation and implementation.

796. Selected Topics in Management. Lecture 3 hours; 3 credits. Prerequisite: permission of the department chair and the graduate program director. Study designed for students who have one or more of the required courses waived, or for students desiring additional work in an area of particular interest in management.

830. Case Development, Research and Analysis. Lecture 3 hours; 3 credits. This course is designed to expose students to case study as a research methodology as well as a pedagogical tool. Topics to be explored include the design, conduct and analysis of case studies; writing case studies; research methodology using case study; and pedagogical issues.
Study designed for students who have had one or more of the required courses waived, or for students desiring advancement in a particular area of specialization.

713/813. Fundamentals of Survey Research. Lecture 3 hours; 3 credits. Prerequisite: DSCI 711/811. This course focuses on the development, implementation, and evaluation of survey research as found in the marketing/management disciplines. The topics covered are experimental and quasi-experimental designs, survey research design, and sampling techniques related to the employment relationship are numerous. This course, however, will focus on those that have the greatest impact on the organization and which have increased risks faced by employers.

625. Leadership in Organizations. Lecture 1 hour; 1 credit. An introduction to leadership. This course will help students understand the impact of what the best research and documented practical experience have shown to be characteristic of effective leadership behavior in a variety of organizational settings. They will better evaluate their own and other's leadership in organizational settings.

619. Business Disputes: Alternatives to Litigation. Lecture 1 hour; 1 credit. An introduction to alternative dispute resolution (ADR), the name given to a variety of non-litigation methods classified by varying degrees, which lead to resolution of disputes.

627. Business Ethics. Lecture 1 hour; 1 credit. An examination and practical application of classical and modern ethical theories as criteria for decision making in a variety of current business situations.

628. Business in Global Cultures. Lecture 1 hour; 1 credit. The understanding of international business is sufficient preparation in learning the host country's culture. This course is designed to introduce students to concepts and methods of understanding and comparing cultures around the globe. The course draws heavily on the works of cross-cultural psychologists.

630. Issues in International Marketing. Lecture 1 hour; 1 credit. Prerequisites: MGMT 602 and MKTG 603. Designed to give students exposure to real life constraints on business development in the global arena. The course will examine development models, including wholly owned subsidiaries and joint ventures, and will expose students to these models. It will explore the decision factors which are driving multinational companies to one model or another and will discuss likely future trends in global business development.

631. Negotiation. Lecture 1 hour; 1 credit. Prerequisite: MGMT 602. Designed to introduce the student to the concepts of negotiation; to examine different types of negotiations, strategies and tactics; and to begin developing negotiation skills. The course will use a variety of reading, case and practical exercises, the student will be introduced to the concepts and strategies of different types of negotiations; achieve an understanding of some basic principles of conducting and participating in successful negotiations; and gain experience from participation in negotiation exercises.

632. Venture Capital: The Entrepreneur's Perspective. Lecture 1 hour; 1 credit. Prerequisites: ACCT 601, ECON 604, FIN 605, MGMT 602, and MKTG 603. The course will familiarize the students with the various aspects of venture capital. The perspective will be from both an entrepreneur's perspective and a venture capitalist's perspective. Emphasis will be on the students to a general overview of the salient issues in seeking, obtaining, and managing venture capital.

633. Seminar in International Marketing. Lecture 1 hour; 1 credit. Develops understanding and skills in applying a complete process of creative and critical thinking in solving real in a variety of current business situations. Emphasis will be on the context of the world, as distinct from context involvement. Individuals will be better equipped to help their organizations, teams, and selves be more effective, adaptable and flexible in the short and long run.

Master of Business Administration — MBA

620. Applied Entrepreneurial Projects. Lecture 3 hours; 3 credits. Prerequisites: completion of core courses or permission of instructor. Skills and concepts developed in previous course work will be integrated and applied to field problems in the Entrepreneurial Center of the College. Conclusions and recommendations will be presented in a formal report. Lectures on topics related to entrepreneurship will be given in late April and late May.

640. Global Marketing Management. Lecture and discussion 3 hours; 3 credits. Prerequisite: MKTG 603 or permission of instructor. This course focuses on the global aspects of business and its potential effects on marketing principles and practices. The course will include the effect of culture on marketing strategy.

650. Marketing on the Internet. Lecture 3 hours; 3 credits. Prerequisite: MKTG 603. Course examines the application of marketing strategies to the Internet. Topics include internet marketing strategy, electronic commerce, web page development, and the impact of the Internet in the marketing environment.

668. Marketing Internship. 1-3 credits. Prerequisites: MKTG 603, graduate standing, and permission of instructor. The course is a practical application of marketing theories, concepts, and marketing tools in a business environment.

696. Selected Topics in Marketing. 3 hours; 3 credits. Prerequisites: permission of the graduate program director.
in population groups, standardization of rates, sources of data, study designs, measurements of risk, analysis of data, study designs, and assignment of one research project to be presented and community intervention trials. Lectures, discussions, and assignment of one research project to be presented to the class.

212. Health Care Strategy. Lecture 3 hours; 3 credits. Examination of strategy-making issues for health care organizations, including strategies for achieving financial viability, financial strategies, development of mission and goals and formulation and implementation of long range strategies to accomplish these goals.

222. Methods of Program Evaluation. Lecture 3 hours; 3 credits. Examination of methodology for designing and conducting program evaluation and research in health care settings. Experimental, non-experimental, and non-experimental procedures will be covered.

272. Policy and Politics of Health. Lecture 3 hours; 3 credits. An introduction to the policy process, research and practice. Emphasis on emerging infectious diseases, environment, health, health care and community intervention trials. Lectures, discussions, and assignment of one research project to be presented to the class.

272. Process Improvement in Health Care. Lecture 3 hours; 3 credits. Examination of contemporary and traditional methods of analysis, design, and evaluation of health care processes in health care delivery. Emphasis will be on the strategic importance of process improvement, design and processes and their application in health care and public health organizations. Emphasis will be on the strategic importance of process improvement and development of diagnostic techniques and quality improvement tools to identify and solve operational problems.

315. Issues in Professional Organizations. Lecture 3 hours; 3 credits. Overview of human resource management in professional organizations, with special emphasis on personal and professional development competencies as well as human resource management of change in professional organizations. Lecture topics include staffing, performance management, working teams and employee governance.

321. Community Management/Policy. Lecture 3 hours; 3 credits. Course designed to introduce students to basic concepts and uses of public health policy and policy making and application of theory to various public health issues. Students from both tracks will take this seminar.

796. Topics. 1-6 credits. Independent Study. 1-6 credits.

Mathematics and Statistics


Mathematics — MATH

101M. An Introduction to Mathematics for Critical Thinking. Lecture 3 hours; 3 credits. Prerequisite: qualifying score on a placement test administered by the University Testing Center. An introduction to the ways in which modern mathematics can be used to model our world and make logical decisions. Topics include problem solving, sets, logic, consumer mathematics (loans, mortgages, annuities), and elementary statistics.

102M. College Algebra. Lecture 3 hours; 3 credits. Prerequisite: qualifying score on a placement test administered by the University Testing Center. Not open to students with credit for MATH 102M. A basic course in algebra which emphasizes applications and problem solving. Topics include algebraic operations, equations and inequalities, graphs and functions, polynomial functions, theory of equations, systems of equations and Gaussian elimination.

162M. Precalculus I. Lecture 3 hours; 3 credits. Prerequisite: qualifying score on a placement test administered by the University Testing Center. Not open to students with credit for MATH 162M. A basic course in algebra which emphasizes applications and problem solving. Topics include algebraic operations, equations and inequalities, graphs and functions, polynomial functions, theory of equations, systems of equations and Gaussian elimination.

163C. Precalculus II. Lecture 3 hours; recitation 1 hour; 3 credits. Prerequisite: MATH 162M. A second course in a two course sequence designed to provide a strong preparation for calculus. Topics include exponential and logarithmic functions, trigonometric functions, trigonometric identities and equations, laws of sines and cosines, vectors and polar representation of complex numbers, and the binomial theorem.

166. Precalculus I and II. Lecture 4 hours; 4 credits. Prerequisites: MATH 102M or 162M or qualifying score on a placement test administered by the University Testing Center (students completing MATH 102M should receive a waiver for MATH 162M). This two-semester precalculus course covering the topics of MATH 162M and MATH 163 in an accelerated pace. Not available to students who have earned transferable credit for MATH 162M and MATH 163.

200. Calculus for Business and Economics. Lecture 3 hours; 3 credits. Prerequisite: MATH 162M. The derivative and its applications. Optimization and approximation. Illustrations of integration and applications to future value and consumer's and producer's surplus.

201. Calculus I and II. 205 is prerequisite to 206. Lecture 3 hours; 3 credits each semester. Prerequisites: MATH 162M and 163. This two semester sequence covers the material of MATH 211 and 212, and in addition introduces some differential equations.

211. Calculus I. Lecture 4 hours; laboratory 1 hour; 4 credits. Prerequisites: MATH 206 and 211. A second course in calculus and analytic geometry. Topics include differentiation and integration of algebraic and transcendental functions of one variable and applications.

212. Calculus II. Lecture 4 hours; laboratory 1 hour; 4 credits. Prerequisite: MATH 206 or 211. A second course in calculus and analytic geometry. Topics include techniques of integration, polar coordinates, infinite series and solid geometry.

226. Honors: Calculus I. Lecture 4 hours; laboratory 1 hour; 4 credits. Prerequisites: MATH 162M and 163. Open only to students in the Honors College. A special honors version of MATH 211.

227. Honors: Calculus II. Lecture 4 hours; laboratory 1 hour; 4 credits. Prerequisite: MATH 206, 211 or 226. Open only to students in the Honors College. A special honors version of MATH 212.

285. Transfer Credit for Calculus III. 4 credits. This course is a VCCS transfer credit vehicle. Students who have earned transferable credit for MATH 279 or 281 at any member institution of the VCCS will be granted credit for MATH 280. The course will not be offered for credit by Old Dominion University. Cannot be used to substitute for MATH 312 for MATH majors or minors.

295. Topics in Mathematics. 1-5 credits. Prerequisite: departmental permission.

300. Number Systems. Lecture 3 hours; 3 credits. Prerequisite: MATH 102M or 162M. Sets and systems of numbers, prime, integer, rational, irrational, real, complex and their properties. Representation of numbers. Divisibility, congruence, modular arithmetic, elementary number theory and symbolic logic. (May not be used to satisfy the upper-division elective requirement of the math majors program.)

302. Geometry. Lecture 3 hours; 3 credits. Prerequisite: MATH 102M or 162M. Euclidean geometry with proofs and applications. Topics include angles, triangles, congruence, quadrilaterals, circles, similarity, coordinate geometry, area, plane and solid constructions. Geometer's Sketchpad software used to discover geometric properties. (May not be used to satisfy the upper-division elective requirement of the math majors program.)

303. Mathematics for Biologists-Introduction to Calculus for Life Sciences. Lecture 3 hours; 3 credits. Prerequisite: MATH 162M. This course is designed to introduce the concepts and methods of elementary differential and integral calculus, with particular emphasis on applications. Topics include exponential functions, logarithms, growth rates, derivatives and elementary integration. The solution of some simple ordinary differential equations used in population growth models will be studied. (May not be used to satisfy the upper-division elective requirement of the math majors program.)

304. Mathematical Methods. Lecture 3 hours; 3 credits. Prerequisite: MATH 206 or 211. This course introduces problem solving methods drawn from differential equations, Laplace transforms, matrix algebra and statistics. (May not be used to satisfy the upper-division elective requirement of the math majors program.)

305. Discrete Math. Lecture 3 hours; 3 credits. Prerequisite: MATH 102M or 162M. Topics: Vectors and matrices, linear systems of equations, matroids, combinatorics, permutations, combinations, elementary probability, logic, relations and functions, induction, graphs and graph theory. (May not be used to satisfy the upper-division elective requirement of the math majors program.)

307. Ordinary Differential Equations. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Topics include first order differential equations and systems, second and higher order linear equations, solution by series and Laplace transform,
or equivalent programming ability. An introduction to the numerical methods commonly used by scientists and engineers. Topics include linear and nonlinear equations; interpolation and polynomial approximation; numerical differentiation and integration; approximation theory, and initial value problems for ordinary differential equations.

305. Introduction to Number Systems and Applications. 3 credits. Prerequisite: MATH 212. An introduction to the number systems and their applications in the real world. Topics include direct methods for solving linear systems, matrix factorization, stability analysis, iterative techniques in mathematics, error analysis, method, approximation of eigenvalues - Householder's transformation, and the QR method.

315. Linear Algebra. Lecture 3 hours; 3 credits. Prerequisite: MATH 316. Axiomatic introduction to theoretical linear algebra. Topics include vector spaces, finite dimensional Basis, linear transformations and their matrix representations, diagonalization, the Cayley-Hamilton Theorem and the Polar Decomposition.

417/517. 418/518. Intermediate Real Analysis I and II. Lecture 3 hours; 3 credits each semester. Prerequisite: MATH 517. 417/517 is prerequisite to 418/518. A rigorous course in classical, nonmeasure theoretic, real analysis. Topics include the topology of Euclidean n-space, properties of vector valued functions, several variable limits, continuity, differentiability and integrability, pointwise and uniform convergence of sequences and series of functions; Fourier series.

420/520. Applied Mathematics I: Biometrics. Lecture 3 hours; 3 credits. Prerequisite: MATH 307. An introduction to the mathematical investigation of biological problems. Topics include scaling systems of differential equations, stability, perturbation methods, and numerical wave propagation. Applications are chosen from interacting populations, transport and reaction diffusion kinetics, transmission of nerve impulses, and immunology.

421/521. Applied Mathematics II: Mathematical Modeling. Lecture 3 hours; 3 credits. Prerequisites: MATH 307, 311W, 312, 316, and 325. A seminar course in formulating, evaluating and validating mathematical models of physical phenomena. Models of traffic flow; mechanical vibration; combustion, quantum mechanics, wave propagation or other fields of applied mathematics will be examined. Techniques learned in previous courses are used to solve applied problems. New methods introduced include phase-plane analysis, characteristics, calculus of variations and perturbation methods.

422/522. Applied Analysis. Lecture 3 hours; 3 credits. Prerequisite: MATH 312. Not available to students with credit in MATH 692. Topics include complex numbers, analytical functions and their properties, derivatives, integrals, series representations, and conformal mappings. Applications of the calculus of residues and mapping techniques to the solution of boundary value problems in physics and engineering.


427/527. Applied Mathematics III: Elasticity. Lecture 3 hours; 3 credits. Prerequisites: MATH 307, 312, and 317. A seminar course in formulating, evaluating and validating mathematical models of physical phenomena. Topics include linear and non-linear elastic continua. Topics include vectors, tensors, deformation, stress, nonlinear constitutive theory, exact solutions, infinitesimal theory, antiplane strain, plane strain, plane stress, extension, torsion, bending and elastic wave propagation.

428/528. Applied Mathematics IV: Fluid Mechanics. Lecture 3 hours; 3 credits. Corequisite: MATH 401/501. Prerequisites: MATH 307 and 312. A mathematical introduction to the subject of fluid dynamics with an emphasis on steady state incompressible flows. The Navier-Stokes equations are derived and known exact solutions are presented as potential fluid solutions. The bulk of the course is spent studying the various viscous approximations to the Navier-Stokes equations. The low Reynolds number approximations due to Stokes and Oseen are discussed and related through matched asymptotics. The boundary layer approximation for a flat plate is examined and the Falkner-Skan equation is derived. An introduction to stability theory is presented and the Orr-Sommerfeld equations are analyzed and matched asymptotics are treated.

456/536. Mathematics and Statistics for Modeling and Simulation. Lecture 4 hours; 4 credits. Prerequisite: prior coursework in mathematics and statistics beyond algebra and trigonometry. This course covers techniques that students who are entering graduate programs in modeling and simulation. Topics include variational and integral calculus, multivariate calculus, ordinary differential equations, linear algebra, elementary statistics and probability.

457/557. Mathematics in Nature. Lecture 3 hours; 3 credits. Prerequisite: MATH 307. A calculus and differential equations based description of many patterns observable in the natural world, including those in oceans, rivers, and puddles; rainbows, halos and other meteorological phenomena; arrangement of leaves, petals and flowers, structure of animal and insect markings; mudcracks; spider webs; and others. Partial differential equations will be discussed as needed but no knowledge of ordinary differential equations will be assumed.

495/595. Topics in Mathematics. 1-3 credits. Prerequisite: permission of the instructor. A course in special topics in mathematics. Permission of the instructor is required.

498/598. Tutorial Work in Special Topics in Mathematics. 1-3 credits. Prerequisite: permission of the instructor. A course in special topics in mathematics. Permission of the instructor is required.
Asymptotic and stochastic methods are developed and used to solve linear and nonlinear differential equations. Included are the Euler, Taylor, Runge-Kutta, Taylor, and Runge-Kutta methods, and boundary layer type solutions. Asymptotic expansions of integrals using Laplace's Method, Method of Steepest Descent and Method of Stationary Phase. Applications from all areas of applied mathematics are given.


703/803-704/804. Advanced Applied Mathematics I & II. Lecture 3-4 hours; 3-4 credits each semester. Prerequisite: MATH 702. Advanced techniques of mathematics applied to specific topics of physical interest. Examples could include high activation energy asymptotics applied to combustion, singular integral equations applied to fracture mechanics, or bifurcation theory applied to non-linear phenomena such as transition to turbulence, phase transitions and hydrodynamic stability.

705/805. Numerical Linear Algebra. Lecture 3 hours; 3 credits. Prerequisite: MATH 408/508. Topics include orthogonal vectors and matrices, norms, singular value decomposition, QR factorization, Gram-Schmidt orthogonalization methods, linear equations problem condition numbers, stability of backward substitution, stability of least squares algorithm, reduction to Hessenberg or tridiagonal form, and QR and LQ factorization.

717/817. Measurement and Integration. Lecture 3 hours; 3 credits. Prerequisite: MATH 518. An introduction to measure theory and related topics with special emphasis on Lebesgue measure and the Lebesgue integral including Fatou’s Lemma, the Monotone Convergence Theorem and the Dominated Convergence Theorem.

721/821-722/822. Advanced Applied Numerical Methods I & II. Lecture 3 hours; 3 credits each semester. Prerequisite: MATH 617/717. Numerical solutions of partial differential equations and integral equations. For PDEs, the finite difference method, the finite element method for elliptic and parabolic PDEs, the method of lines, the method of characteristics and a posteriori error estimates are examined. For integral equations, topics include Galerkin methods, collocation methods, and the Petrov-Galerkin method.

723-724/823-824. Approximation and Optimization I & II. Lecture 3 hours; 3 credits each semester. Prerequisite: permission of the instructor. An introduction and advanced topics representing current research in approximation and optimization techniques for various application problems. Topics include recent developments in algorithms, their analysis, and applications such as data fitting and pattern separation.


748/848. Tensor Analysis. Lecture 3 hours; 3 credits. Prerequisite: MATH 691. Algebra and calculus of tensor quantities, including invariance under coordinate transformation of tensors, contravariant and covariant tensors, Christoffel symbols, covariant and intrinsic differentiation, generalized products and operations of vector analysis. Basic equations of differential geometry, dynamics, electromagnetic field theory, elasticity and fluids in generalized coordinates.

750/850. Variations. Lecture 3 hours; 3 credits. Prerequisites: MATH 691 and 692. Maximum and minimum principles in calculus and dynamic programming. Derivation of the Euler equations for two cases, constrained conditions, formulation of extremum problems with side conditions for ordinary and partial differential equations. Application, dynamic programming, heat and mass transfer, energy principles and finite element techniques.

795/895. Seminar in Mathematics. 1-3 credits. Prerequisite: permission of the instructor.

898. Research in Mathematics. 1-9 credits. Prerequisite: permission of the instructor.

Statistics - STAT

130M. Elementary Statistics. Lecture 3 hours; 3 credits. Prerequisite: MATH 101 or STAT 130M. An introduction to hypothesis testing, interval estimation techniques, and the description of probability is introduced and its role in statistical inference is emphasized.

306. Introductory Statistics. Lecture 3 hours; 3 credits. Prerequisite: MATH 126M. An introduction to the principles of probability and statistics course designed specifically to accommodate the needs of school teachers and health professionals. Probability theory, discrete random variables, continuous random variables, interval estimation, regression and correlation, hypothesis testing (one- and two-tailed), and the use of computer software to satisfy the upper division elective requirement of the math major program.)

310A. Survey Data Analysis. Lecture 3 hours; 3 credits. Prerequisite: STAT 130M or MATH 211. This is a first course in applied data analysis. Identification and interpretation of best-fitted models obtained by data analysis of results will be stressed. Topics include measures of location, dispersion, and strength of relationship; parameter estimation, confidence intervals of estimates, and analysis of variance; complete block designs; simple and multiple regression; correlation; measures of association for nominal and ordinal variables; and the interpretation of computer output with a popular statistical computing package. Written interpretation of results will be a routine component of daily assignments.

330. An Introduction to Probability and Statistics. Lecture 3 hours; 3 credits. Prerequisite: MATH 211. Not open to students with credit in STAT 331. Descriptive statistics, probability theory and probability distributions, mathematical expectation and its role in decision making, hypothesis testing, point and interval estimation, numerous applications.

331. Theory of Probability. Lecture 3 hours; 3 credits. Prerequisite: MATH 211. Probability theory including probability functions, continuous and discrete random variables, combinatorics, special probability distributions, discrete and continuous random variables, properties, expected value, variance, independence, and sampling distributions. An introduction to the use of the central limit theorem and the approximation of results from various sampling distributions to normal distributions. An introduction to the use of the central limit theorem and the approximation of results from various sampling distributions to normal distributions.

404/504. SSPPS for Windows. Lecture 1 hour; laboratory .50 hour; 1 credit. Prerequisite: STAT 130M or permission of the instructor. Focus on the use of a data relational package for the windows environment. The fundamentals of the base system will be covered. Topics include the six SSPPS windows, SSPPS data files, importing and exporting data, merging data files, data manipulation and recoding, SSPPS functions, descriptive statistics, exploratory data analysis, chart creation, and data tabulations.

405/505. SAS: An Introduction to Data Handling. Lecture 1 hour; laboratory .50 hour; 1 credit. Prerequisite STAT 130M or permission of the instructor. The laboratory work required. Use of SAS to bring data sets to a form suitable for statistical analysis by one of the many SAS procedures. Focus is on the SAS data step and related utilities, including data input, merging of data sets, creating new variables, SAS functions, sorting, printing, charting and formatting. Includes a brief overview of SAS statistical procedures.

431/531. Theory of Statistics. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Elements of probability, distribution, random variables, discrete and continuous random variables, mathematical expectation and its role in decision making, hypothesis testing, point and interval estimation, numerous applications.

432/532. Sampling Theory. Lecture 3 hours; 3 credits. Prerequisite: STAT 431/531. Sampling from finite populations, sampling schemes, ratio and regression estimation are included. Also discussed are aspects of the random sampling, cluster sampling, and multi-stage sampling.

435/535. Design and Analysis of Experiments. Lecture 3 hours; 3 credits. Prerequisite: MATH 212. Includes an introduction to the principles of design and the analysis of variance, and regression and analysis of covariance models, and the use of software packages, exploratory a catalog of data sets spanning a variety of fields and applications, including data suitable for regression, ANOVA, time series modeling, and multivariate techniques. Approaches will include nonparametrics, simulation, and bootstrapping. SAS will be used extensively, with some S-plus and possibly other specialized products. For writing actual (not packaged) code, PROC IML and S-plus will be used. The SAS Macro facility will be explored as well as SQL, array processing, and PROC CAPABILITY. This is a finishing course for applied statisticians, highly recommended for students planning a career in statistical programming.

497/597. Topics in Statistics. 1-3 credits. Prerequisite: permission of the instructor.

613. Applied Statistical Methods I. Lecture 3 hours; 3 credits. Prerequisite: STAT 130M or 330 or MATH 211 or permission of the instructor. Topics include all academic disciplines; not available for credit to graduate students in the Department of Mathematics and Statistics. Topics to be selected from descriptive statistics, statistical estimation, hypothesis testing, linear regression, analysis of variance and categorical data analysis, and topics on statistical analysis of genomic data and applications. The rationale for selecting statistical methods to address research questions will be emphasized. Examples will be given from health sciences, social sciences, engineering, education and other application areas.

614. Applied Statistical Methods II. Lecture 3 hours; 3 credits. Prerequisite: STAT 613. An introduction to regression and analysis of variance computations, probability distributions, distribution of data, time series analysis, and the use of specialized products. For writing actual (not packaged) code, PROC IML and S-plus will be used. The SAS Macro facility will be explored as well as SQL, array processing, and PROC CAPABILITY. This is a finishing course for applied statisticians, highly recommended for students planning a career in statistical programming.

625-626. Mathematical Statistics I & II. 625 is prerequisite to 626. Lecture 3 hours; 3 credits each semester. Prerequisite: MATH 417/517 or MATH 613/713. An introduction to probability and statistical inference. Topics include probability, conditional probability, Bayes formula, independence, using log normal distribution, applications to measuring indoor air quality, water quality, etc. Emphasis will be on the applications of these tools to environmental data using statistical softwares.

445/545. Statistical Quality Control. Lecture 3 hours; 3 credits. Prerequisite: STAT 431/531 or MATH 212. An introduction to the principles of statistical quality control. Control charts, acceptance sampling, and a study of Deming's contributions to the subject with case studies.

475A. Analysis of Longitudinal Data. Lecture 3 hours; 3 credits. Prerequisite: STAT 431/531. Suggested corequisite: STAT 405/505. Topics include general linear models for both continuous and discrete longitudinal data, general linear mixed parametric models for covariance structure, the weighted least squares (WLS), the maximum likelihood (ML), the restricted maximum likelihood (REML) estimation of covariance structures, generalized estimating equations (GEE) and newly developed quasi least squares (QLS). Comparison and contrasts between these methods will be discussed. Techniques to handle missing values will also be considered. Emphasis will be on the application of these tools to data related to the biological and health sciences. Methods will be implemented using statistical softwares.

449/549. Nonparametric Statistics. Lecture 3 hours; 3 credits. Prerequisites: STAT 330 or 331 or departmental permission. Topics include the theory and applications of binomial tests and rank tests, including the tests of McNemar, Mann-Whitney, Friedman, Kruskal-Wallis, and Smirnov.
Mechanical Engineering — ME

Professors J. K. Huang (Chair of the Department of Mechanical Engineering), Mitsuhiko Kasei (Professor of Manufacturing Engineering), S. K. Chatuvedi, A. O. Demuren, G. J. Hou (Graduate Program Director), S. R. Smith, A. C. Iborra, P. H. Mellott, and S. N. Tiwari. Associate Professors S. Bawab and S.G. Cupples.

195. Topics in Mechanical Engineering. Lectures variable; 1-3 credits each semester. Permission of the chair required.

201. Materials Science. Lecture 3 hours; 3 credits. Principles of materials science with emphasis on the relationship between structure and properties and their control through processing methods, metallics, polymers, ceramics, and composite materials are considered.

203. Mechanical Engineering Laboratory I - Materials Science. Laboratory 2 hours; 1 credit. Corequisites: ME 201 and CS 150. This laboratory involves experiments demonstrating lecture material covered in the ME 201 course.

204. Engineering Mechanics I - Statics. Lecture 3 hours; 3 credits. Corequisites: PHYS 231N. Prerequisite: MATH 211. Introduction to mechanical engineering problems and their solutions through the study of statics of particles and rigid bodies. Emphasis will be placed on the relationship of the static loads with the mechanical properties of the materials being considered. Introduction to the concepts of stress and strain and internal forces as applied to static bodies.

205. Dynamics. Lecture 3 hours; 3 credits. Prerequisite: ME 204 or CEE 100. Introduction to dynamics of solids, stiffness and their relation to each other. Stress and strain in axially loaded members and circular rods and tubes subjected to torsion. Normal and shear stresses in thin plates. Additional topics include bending deflection, transformation of stress and strain, Mohr's circles, statically indeterminate problems, combined stress and strain.

225. Mechanical Engineering Laboratory II - Solid Mechanics. Laboratory 2 hours; 1 credit. Corequisite: CS 150. This laboratory is an integral study of the mechanical behavior of materials under axial, bending and torsional loads. Measurements of elastic properties and strengths. Statistical treatment of data. Use of strain gauges. Experiments with composite materials and piezo-electric transducers. Use of data acquisition system. Experiments parallel lectures in ME 205.

226. Topics in Mechanical Engineering. Lectures variable; 1-3 credits each semester. Department chair permission required.


305. Mechanical Engineering Laboratory III - Thermohydro-Fluids. Laboratory 2 hours; 1 credit. Corequisites: ME 303 and 305. Analysis of heat and mass transfer, properties of the fluids, and measurement; basic flow phenomena demonstrated; measurement techniques for flow temperature, pressure and properties; report writing and data reduction methods, including statistical treatment of data; formal oral reports.

311. Thermodynamics I. Lecture 3 hours; 3 credits. Prerequisites: ME 303 and 305. Essential definitions of thermodynamics, first law, physical properties, ideal and real gases, second law, reversibility, irreversibility and consequences of thermodynamic cycles.

312. Thermodynamics II. Lecture 3 hours; 3 credits. Prerequisites: ME 311. Analysis of heat engines, refrigeration, gas turbines, internal combustion engines, steam power plants and heat exchanger equipment from theoretical and applied viewpoints.

411/511. Mechanical Engineering Power Systems Theory and Design. Lecture 3 hours; 3 credits. Prerequisites: ME 205 and 207. Basic mechanics governing vehicle dynamic performance. Analytical methods in vehicle dynamics. Vehicle dynamics tests on model vehicles. This course cannot replace any of the approved ME option courses. (cross-listed with AE 453/553)

415/515. Fluid Mechanics and Aerodynamics. Lecture 3 hours; 3 credits. Prerequisites: ME 303, 312, and 340. Inviscid flow concepts including: Euler equations, stream function, velocity potential, singularities, vorticity, and circulation laws. Viscous flow topics include boundary layers, separation, and turbulent flow. In addition, external flows, lift and drag, thin airfoil theory, finite wing theory, and airfoil design will be discussed.

420/520. Vibration. Lecture 3 hours; 3 credits. Corequisites: ME 205, 220, and MATH 312. Free and forced vibrations of undamped and damped, single-degree of freedom systems, multiple degree of freedom systems and continuous systems. Exact and approximate methods to find natural frequencies.

450/550. Gas Power Plants. Lecture 3 hours; 3 credits. Corequisites: ME 303, 312, and 340. Inviscid fluid concepts including: Euler equations, steam function, velocity potential, singularities, vorticity, and circulation laws. Viscous flow topics include boundary layers, separation, and turbulent flow. In addition, external flows, lift and drag, thin airfoil theory, finite wing theory, and airfoil design will be discussed.

460/560. Solar Power Engineering. Lecture 3 hours; 3 credits. Prerequisites: ME 303 and 312. Principles of solar energy processes on earth are followed by engineering analysis

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of collectors (flat-plate, focusing, etc.), receivers/boilers, energy storage methods, space heating and cooling techniques, and mechanical systems; dynamic stress and vibration.

417/517. Propulsion Systems. Lecture 3 hours; 3 credits. Prerequisites: ME 312 or 414/514. Basic principles of propulsion systems; impulse and reaction; nuclear rocket propulsion; launch vehicles; reaction engines; propulsion system analysis and design; and verification. Typical case studies are beam and plate designs, turbine blade design, and pipe networks. Selected topics include: thermal stress analysis and plates and shells.

495-496. Topics in Mechanical Engineering. Lectures variable; 1-3 credits each semester. Prerequisite: senior standing; permission of the chair is required. (Offered fall, spring, summer)

595. Thermo-Mechanical Engineering. Lecture variable; 1-3 credits. Prerequisite: graduate standing. Special topics of interest with emphasis placed on recent developments in mechanical engineering or engineering mechanics.

605. Advanced Dynamics. Lecture 3 hours; 3 credits. Prerequisites: ME 205 and MATH 312. Derivatives of vector functions and motion in the plane; dynamics of particles, Lagrange's equations and rigid body dynamics. Application to zeroth, first, and second order differential equations. Kinematic and dynamic analysis of mechanical systems is emphasized with computer applications.


609. Theory of Elasticity. Lecture 3 hours; 3 credits. Prerequisites: MATH 215 and ME 607. Irreversibilities of equilibrium, strain-displacement, compatibility, and constitutive relations. Formulation and solution of simple stress and strain problems; plane engineering boundary value problems for beams, disks, thick-walled cylinders and various stress raiser problems. Torsion of thin-walled sections. General three-dimensional elasticity problems. (Cross-listed with AE 630.)

610. Advanced Fluid Dynamics. Lecture 3 hours; 3 credits. Prerequisite: ME 210 or MATH 219. Conservation laws of momentum, mass, and energy equations; one-dimensional flows; Navier-Stokes equations; boundary-layer theory; introduction to internal and rotational flows; application to flows in pipes and blade passages. Lecture 3 hours; 3 credits. Corequisite: MATH 691. Rigorous development of the macroscopic theory of thermodynamics; structure of heat engines; and laws of thermodynamics of matter; phase and chemical equilibria.

611. Advanced Classical Thermodynamics. Lecture 3 hours; 3 credits. Corequisite: MATH 691. Rigorous development of the macroscopic theory of thermodynamics; structure of heat engines; and laws of thermodynamics of matter; phase and chemical equilibria.

612. Theory and Design of Turbomachines. Lecture 3 hours; 3 credits. Prerequisite: ME 210. Fluid mechanics of radial, axial, and mixed-fl ow machines; performance; design criteria; cavitating two-phase flow considerations.

615. Compressible Flow. Lecture 3 hours; 3 credits. Prerequisite: ME 414/514 and 610. Conservation equations in compressible gas dynamics; method of characteristics; small disturbance equations; two-dimensional compressible flow; response to steady and unsteady sources; boundary layer; inviscid and viscous flow; complex one-dimensional problems; cavitating two-phase flow considerations.

616. Convection Heat Transfer. Lecture 3 hours; 3 credits. Prerequisite: ME 610. Corequisite: ME 611. Conservation equations; heat transfer in internal and external flows; radiation of energy; boundary layers for incompressible and compressible flow; energy transfer by convection processes.

619. Conduction Heat Transfer. Lecture 3 hours; 3 credits. Prerequisite: MATH 691. Corequisite: MATH 692. Analytic and numerical solutions to steady and unsteady, one-dimensional problems; nonuniformly extended surfaces, boundary value and characteristic value problems.

620. Introduction to the Theory of Plasticity. Lecture 3 hours; 3 credits. Prerequisite: ME 609 and permission of the instructor. Stress and strain tensors, equations of plasticity; basic plasticity theory; elastic field, plastic field, and strain damage; and stability analysis. Selected topics include: thermal stress analysis and plates and shells.

621. Advanced Design. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Concepts, principles and procedures related to analysis of stresses and strains, determination of function of parts along with factors such as forces, life required, maximum cost, weight and space restrictions, number of parts of the same type, and proposed environmental restrictions. Finite element analysis to illustrate different aspects of stress analysis.

624. Advanced Aerodynamics. Lecture 3 hours; 3 credits. Prerequisite: ME 609. Application of computational fluid dynamics techniques to aerospace vehicles. Available by the department and the Cooperative Education program

MECHANICAL ENGINEERING COURSES
decisions. Quality control.
Statistics of distributions. Testing of hypotheses and
Manufacturing.
Advanced CAD software for finite element modeling and
project in the organization.
An opportunity to gain short duration career-related
experience. Will vary with the amount of credit desired. Allows students an
opportunity to gain short duration career-related
experience.

69. Mechanical Engineering Seminar. 1 credit.
Current topics in Mechanical Engineering or Engineering Mechanics are reviewed, often by guest lecturers.

68. Robots and Manufacturing Automation. 3 hours; 3 credits.
Stress analysis of precision engineering with emphasis on the design-manufacture interface for single products; Rapid prototyping projects; Design of injection-molded plastic parts.

68. Concurrent Engineering. Lecture 3 hours; 3 credits; S3. Study of concurrent engineering models to address problems’ processes and determine solutions to improve bottom-line performance. Concurrent Modeling project will be a key component of this course to reinforce the principles of Process Re-Engineering. Another major topic is Parametric Design by CADD.

68. Projects in Design and Manufacturing. Lecture 3 hours; 3 credits; Prerequisite: permission of the instructor. Project(s) course to allow students to complete a practical engineering assignment in design and manufacturing areas. (available for pass/fail grading only)

68. Engineering Design with Uncertainties. Lecture 3 hours; 3 credits; Prerequisite: ME 680 or permission of the instructor. An introduction to manage uncertainties and risk in strength design of mechanical components. A study of theoretical background, computational implementation, and applications of reliability-based methods for engineering analysis and design.

69. Master’s Project. 1-3 credits. Individual project, under the guidance of the student’s major professor, (available for pass/fail grading only)

69. Doctoral Research. 1-3 credits. Individual project, under the guidance of the student’s major professor. Research leading to the Master of Science thesis.

70/806. Modal Analysis and Identification. Lecture 3 hours; 3 credits; Prerequisite: ME 404/504 and 623. Theoretical basis of modal analysis; measurement and excitation techniques; and linear and nonlinear modal identification techniques with applications to different model structures; direct parameter identification; component mode synthesis.

713/813. Theory of Transfer Phenomena. Lecture 3 hours; 3 credits; Prerequisite: ME 611 and 618. An introduction to various diffusion processes; conservation equations and boundary conditions; mass, heat, and momentum fluxes in terms of driving forces and phenomenological coefficients; the Boltzmann equation; and the collision integrals, moments of the Boltzmann equation, Chapman-Enskog expansions, and evaluation of these techniques for predicting transport properties; diffusion in solids and in laminar and turbulent flows; special topics on combined mass, momentum, and energy transfer.

715/815. Engineering Optimization I. Lecture 3 hours;
3 credits. Prerequisite: graduate standing. Formulation and solution algorithms for Linear Programming (LP) problems. Unconstrained and constrained nonlinear programming (NLP) problems. Optimum solution for practical engineering systems.

718/717. Turbulent Flow II. Lecture 3 hours; 3 credits.
Prerequisite: ME 644. Basic concepts in isotropic, homogeneous, free-shear, and wall turbulence; statistical theories of turbulence models, two-point closure models; coherent structures, direct numerical simulation, large eddy simulation, and sub-grid scale models.

718/818. Engineering Optimization II. Lecture 3 hours; 3 credits. Prerequisite: ME 715/815 or CEE 715/815. Sensitivity analysis and system sensitivity analysis of distributed systems; dual methods for constrained optimization; optimization decomposition, multilevel optimization and recent developments in engineering optimization.

734/834. Radiation Heat Transfer. Lecture 3 hours; 3 credits.
Prerequisite: permission of the instructor. Conduction, convection, and radiation heat transfer; radiation interchange in nonparticipating media; radiant energy transfer through absorbing, emitting, and scattering media; radiation in presence of other modes of energy transfer; approximate and advanced methods for radiation transfer analyses.

742/842. Fatigue and Fracture. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Divided into areas of fatigue and fracture; stress-controlled and strain-controlled fatigue; effect of mean stresses, notches, etc; multi-axial stresses; variable amplitude loading; ductile and brittle fracture; linear elastic fracture mechanics; crack-tip plasticity; fracture testing; applications to fatigue life estimation.

744/844. Computer Integrated Manufacturing. Lecture 3 hours; 3 credits. Prerequisite: ME 684. An introduction to the various components of the manufacturing system and the components that are important to the CIMS environment. A study of the design, control, and management of integrated production/manufacturing systems. Topics include modeling of manufacturing processes, CAD/CAM systems, flexible manufacturing systems, job shop technology, process planning, concurrent engineering, and shop floor control; introduction to CIMS implementation and applications.

745/845. Contemporary Manufacturing Technology. Lecture 3 hours; 3 credits; Prerequisite: ME 744/844. Treats all aspects of the design of the manufacturing system and technology. Topics include manufacturing strategy; trends in manufacturing control; factory simulation; accounting for manufacturing and issues in manufacturing systems design.

746/846. Computational Methods in Multibody Dynamics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. The objective of this course is to present basic methods for the computer formulation and solution of the equations of kinematics and dynamics of mechanical systems which are often made of interconnected bodies. The major topics include constrained motion, principle of virtual work, constrained dynamics and spatial dynamics.

748/848. Kinematic Synthesis of Mechanisms. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. The general classification of mechanisms; size and number synthesis, application of graph theory, expert systems for synthesis; introduction to dimensional synthesis via partial-fundamental-displacement theory including concept of poles, circlepoint, and centerpoint curves; structural error minimization using Chebyshev’s approximation; application approaches; current applications to robot manipulators, robot hands, space structures, and combustion engines.

757/857. Optimization. Lecture 3 hours; 3 credits; Prerequisite: ME 636. Parameter optimization, optimization problem for dynamic systems with terminal and path constraints; optimal feedback control with and without the presence of uncertainty; nonlinear optimal control system.

780/880. Fundamentals of Combustion. Lecture 3 hours; 3 credits. Prerequisite: ME 610 and 611. Chemical equilibrium in reacting systems, chemical kinetics of single and multistep mechanisms, combustion reaction; calculations for multicomponent reacting systems; Shvab-Zeldovich formulation, detonation and deflagration waves, flame propagation limits; ignition in course of turbulent diffusion flames; applications to engine processes.

790/890. Chemically Reacting Flows. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Chemical kinetics in homogeneous and surface processes; integration of relaxation rates in the conservation principles of fluid mechanics for non-dimensional parameters and limit case applications.

795/895. Topics in Mechanical Engineering or Engineering Mechanics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Selected topics in mechanical engineering or engineering mechanics.

796/896. Topics in Computational Engineering or Engineering Mechanics. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Selected topics in mechanical engineering or engineering mechanics.

899. Ph.D. Dissertation Research. 3 hours; 3 credits. Prerequisite: permission of the instructor. Research and study of original problems in Mechanical Engineering or Engineering Mechanics. Variable credit.

Medical Technology — MEDT

Associate Professor C.T. Somma (Chair of the School of Medical Laboratory and Radiation Sciences) and F.E. Contado (Program Director), Assistant Professor S. K. Thompson.

21. Orientation to Medical Technology. Lecture 1 hour; 1 credit. Focus on concepts related to the field of medical technology. Professional, ethical and operational issues will be discussed.

207. Clinical Methods in Microbiology. Laboratory 4 hours; 2 credits. Corequisite: MEDT 307. Laboratory techniques in the diagnosis of clinically relevant microorganisms.

308. Clinical Microbiology. Lecture 3 hours; 3 credits. Prerequisites: BIOL 115N, 116N; CHEM 311 is recommended. An introductory course to the fundamental course in microbiology which includes bacterial growth, synthesis, differentiation, microbial nutrition and metabolism.

309. Medical Bacteriology. Lecture 3 hours; 3 credits. Prerequisites: BIOL 250, 251 or permission of the instructor. The study of the principles of the formation and development of blood, including the interpretation of normal and abnormal blood morphology and diagnostic procedures in the investigation of hematological disorders.

Hematology Laboratory. Lecture 3 hours; 1 credit. Corequisite: MEDT 311. Laboratory methods utilized in the diagnosis and investigation of hematological disorders.

313. Diagnostic Methods in Pathology. Laboratory 3 hours; 1 credit. Prerequisite: BIOL 250. Corequisites: laboratory experience in the chemical, physical, and microscopic examination of the urine with emphasis on quality control, cellular and chemical characteristics.

315. Clinical Laboratory Diagnosis. Lecture 3 hours; 3 credits. Prerequisite: students must be graduates of a clinical laboratory科学技术, including colonial morphology, cultural characteristics, biochemical identification, pathogenicity, epidemiology, and treatment.

316. Urinalysis and Body Fluids. Laboratory 3 hours; 1 credit. Prerequisite: BIOL 250, 251 or permission of the instructor. A study of the chemical, physical and microscopic analysis of urine and other body fluids. Experiments and laboratory results interpreted and correlated to disease processes.

Hematology Laboratory. Lecture 3 hours; 1 credit. Prerequisite: BIOL 250. Corequisites: laboratory methods utilized in the diagnosis and investigation of hematological disorders.

Phlebotomy Internship. 2 credits. Prerequisite: MEDT 320. A 120-hour clinical internship for non-majors desiring to qualify for the ASCP certification exam.

320. Phlebotomy Methods. Lecture 1 hour; Laboratory 3 hours; 2 credits. Prerequisites: BIOL 250 or equivalent. Methods for the procurement of blood by capillary, venipuncture and arterial draws, special phlebotomy tests, isolation techniques, safety, legal and ethical implications.

322. Phlebotomy Collection. Lecture 2 hours; Laboratory 4 hours; Clinical 8 hours; 5 credits. Prerequisite: BIOL 250 or equivalent. Experience in laboratory techniques in phlebotomy, including venipuncture, capillary sticks, special test procedures and isolation techniques, safety, legal and ethical implications. Includes a clinical component.

510. Phlebotomy Collection and Analysis. Lecture 3 hours; 3 credits. Students must be graduates of a clinical laboratory technology. Lecture 1 credit. Prerequisites: MEDT 250, 251. Students desiring to qualify for the ASCP certification exam.

323. Clinical Instrumentation and Evaluation. Lecture 3 hours; 3 credits. Prerequisites: CHEM 301, 302, MATH 102M or permission of the instructor. A course covering the theory, operation, and maintenance of instruments in the clinical laboratory. Instruments discussed included spectrophotometers, flame instruments, pH and blood gas analyzers, blood coagulation analyzers, gas chromatographs, photometers, radiation counters, dosimeters, osmetry, electromicroscopy, basic electronics and trouble shooting equipment. Statistical applications to data analysis and quality control in the
Middle Eastern Studies—MIDE

300. Perspectives on the Middle East. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

390/495. Topics in Middle Eastern Studies. 3 credits. Prerequisite: MEDT 307, 308, or permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

400. Middle Eastern History, 3 credits. Prerequisites: Histor 314 and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

405. Middle Eastern Society, 4 credits. Prerequisites: HIST 101 and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

410/510. Islam and the Religious Life. Lecture 3 hours; 3 credits. Prerequisites: three hours of historical, political, or social science courses or permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

420. Middle Eastern Politics, 4 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

430. Middle Eastern Business, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

440. Middle Eastern Culture, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

450. Middle Eastern Literature, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

460. Middle Eastern Film, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

470. Middle Eastern Art, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

480. Middle Eastern Music, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

490. Middle Eastern Languages, 3 credits. Prerequisites: MEDT 307, 308, and permission of instructor. This course explores the Middle East from interdisciplinary perspectives.
... The leadership and skills evaluations at the camp weigh highly structured and demanding, stressing leadership at the small unit level under varying, challenging conditions. Participation in one overnight adventure training exercise per semester is required.

605. Engineering Systems Modeling. Lecture 3 hours; 3 credits. Prerequisites: MATH 307 and one course on probability or statistics. Course focuses on discrete event analysis and modeling as found in engineering systems. Statistical model, queueing and introduction to Markov models.

619. Practicum. 1-3 credits. Prerequisite: MSIM 602 or instructor permission. For students承担advanced topic and develop an approach and rationale for application of the codes of best practice for combat models. Application of the codes of best practice for combat models. Design of a simulation study plan. Component-based implementation of a simulation federate. Application of the federation development plan, simulation and visualization of the study results.

667. Cooperative Education. 1-3 credits. Available for students承担undergraduate credit only, with departmental approval. Participation in cooperative education requires a commitment to the internship experience. Students are assigned a teacher, mentor, advisor and evaluator throughout the training program.

617. Cadet Troop Leadership Training Program (CRTL). 3 credit hours. Prerequisite: departmental approval. A two to four week training program designed to introduce junior officers to responsibilities of commissioned lieutenants. Stateside or overseas programs are available. Travel, lodging and most meals are defrayed by the U.S. Army. Travel, lodging and most meals are defrayed by the U.S. Army.

395. 396. Independent Study. Lecture 3 hours; 3 credit hours. Prerequisite: departmental approval. Prerequisites: MSL 301/302 or 395/396, or departmental approval. Corequisite: MSL 411+. Class teaches the initial steps in conducting an independent research project. Includes determination of an advanced topic and development of an advanced topic and development of a proposal for a research project. Includes course development and management, literature search, development of simulation topics, and simulation development topics. The student will receive pay. Travel, lodging and most meal costs are defrayed by the U.S. Army. The student will receive pay. Travel, lodging and most meal costs are defrayed by the U.S. Army. The student will receive pay. Travel, lodging and most meal costs are defrayed by the U.S. Army.

405/505. Introduction to Discrete Event Simulation. Lecture 3 hours; 3 credits. Prerequisites: undergraduate course in computer science (or equivalent). An introduction to the fundamentals of discrete event simulation. Topics include discrete event simulation methodology, development of simulation validation techniques, and design and validation, and the design of simulation experiments. Important statistical concepts, including selection of input probability distributions, simulation analysis, and simulation reduction techniques, are developed and applied. (cross listed with ECE 505/605).

601. Introduction to Modeling and Simulation. Lecture 3 hours; 3 credits. First course for modeling and simulation. Discipline surveyed at an overview level of detail. Definitions, paradigms, applications, and sub-disciplines are introduced. Orient students to MSIM discipline and provides general conceptual framework for further MSIM studies.

602. Modeling and Simulation. Lecture 3 hours; 3 credits. Corequisite: MSIM 601. Introduction to computer science concepts essential for implementation of large simulations. Emphasis on design and analysis of algorithms and implementation and use of data structures. Intended for MSIM students without a CS degree. Not open for credit for CS graduates or majors.

605. Engineering Systems Modeling. Lecture 3 hours; 3 credits. Prerequisites: MATH 307 and one course on probability or statistics. Course focuses on discrete event analysis and modeling as found in engineering systems. Statistical model, queueing and introduction to Markov models.

620. Introduction to Combat Modeling. Lecture 3 hours; 3 credits. Prerequisites: MSIM 602 or instructor permission. Development of combat models: combat models, combat modeling research; code of best practices; data and algorithms for combat modeling issues; related issues; integration into the operational environment and analysis. Participation in one overnight adventure training exercise per semester is required.

630. Developing and Applying Combat Models. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: CS 125 or equivalent. MSIM 602 is equivalent and MSIM 695 Introduction to Combat Modeling or equivalent (i.e., student must be able to program and know combat models). Design of a simulation study plan. Component-based implementation of a simulation federate. Application of the federation development plan, simulation and visualization of the study results.

667. Cooperative Education. 1-3 credits. Available for credit; credit is awarded for participation in a grant or credit based on academic relevance of the work experience, criteria, and evaluation procedures as formally determined by the academic advisor. Cooperative Education Management program prior to the semester in which the work experience is to take place. Participated in a simulation study plan. Component-based implementation of a simulation federate. Application of the federation development plan, simulation and visualization of the study results.

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to the use of music in elementary school.

309. Principles of Conducting. Lecture 1 hour; 1 credit. Required prior to the personal observation of the instructor. The development of basic skills and techniques necessary for conducting choral and instrumental ensembles.

312-322. Advanced Theory. 321 is prerequisite to 322. Lecture 2 hours; 2 credits each semester. Prerequisites: MUSC 222 and 224, or permission of the instructor. A continuation of MUSC 222, focusing on the development of the major and minor modes, with emphasis on the principles of harmony. (offered fall, even years)

323-324. Advanced Ear Training, Sight Singing, and Dictation. 323 is prerequisite to 324. Lecture/laboratory 2 hours each; 4 credits. Prerequisites: MUSC 222, or permission of the instructor. A continuation of MUSC 224, focusing on the development of the major and minor modes, with emphasis on the principles of harmony. (offered fall, even years)

335T. Introduction to MIDI Technology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: music student or permission of the instructor. This course will introduce students to the MIDI technology, including editing techniques and music notation skills.

336. Introduction to Multi-Track Recording. Lecture 2 hours; 3 credits. Prerequisite: music student or permission of the instructor. This course will introduce students to the basic techniques of recording and editing music on multitrack tape.

337. Jazz Improvisation I. Lecture 2 hours; 2 credits. Prerequisite: MUSC 222 or permission of the instructor. This introductory course will focus on the basic concepts of improvisation, with an emphasis on harmonic and melodic implications.

338. Jazz Improvisation II. Lecture 2 hours; 2 credits. Prerequisite: MUSC 337 or permission of the instructor. This course is a continuation of MUSC 337, and will delve further into the advanced techniques used in Jazz improvisation.

345, 346. Diction for Singers. Lecture 2 hours; 1 credit. Prerequisite: MUSC 108 or permission of the instructor. A survey of the basic physical, vocal, and phonetic techniques used by professional singers.

353W, 354. Tenor and Baritone. Lecture 2 hours; 3 credits each semester. Prerequisites: MUSC 127, 128, 210, 211, 212, 213, or permission of the instructor. A general survey of the development of music in the history of the tenor and baritone voice.

377, 378. Extracurricular Studies. 1-6 credits each semester. Prerequisites: approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities. Extracurricular activities may be approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Credit is subject to review by the provost.

395, 396. Topics in Music. 1-3 credits each semester. Prerequisites: permission of the instructor. A study of selected topics designed for nonmajors, or for credit within a major. These courses will appear in the course catalogue, and prerequisites and procedures for each course may be found in information distributed to all academic advisors.

397. Studio Work in Special Topics in Music. 1-3 credits each semester. Prerequisites: junior standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

401. Music Education: Elementary Vocal Methods. Lecture 2 hours; 2 credits. Corequisite: MUSC 402. Prerequisite: ECI 301. Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Focuses on the development of vocalists and their color possibilities in various combinations. Practical experience in scoring for small and large ensembles. (offered fall, even years)

402. Music Education: Elementary Vocal Methods. Lecture 2 hours; 2 credits. Corequisite: MUSC 402. Prerequisite: ECI 301. Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Focuses on the development of vocalists and their color possibilities in various combinations. Practical experience in scoring for small and large ensembles. (offered spring, odd years)

403T. Advanced Theory. Lecture 2 hours; 3 credits. Prerequisite: MUSC 402. Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Focuses on the development of vocalists and their color possibilities in various combinations. Practical experience in scoring for small and large ensembles. (offered fall, even years)

404. Music Education: Practicum (Secondary Vocal). 1 credit. Prerequisite: MUSC 403. Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Must be taken concurrently with MUSC 403. Enables students to observe master teachers and to test accumulated teaching practices in secondary school vocal classroom settings. (offered spring, even years)

405. Music Education: Elementary Instrumental Methods. Lecture 2 hours; 2 credits. Corequisite: MUSC 406. Required prior to student teaching for all students in music education with instrumental music concentration. Focuses on materials and methods of instrumental music instruction in the elementary setting. (offered fall, even years)

406. Music Education: Practicum (Elementary Instrumental). 1 credit. Prerequisite: ECI 301. Required prior to student teaching for all students in music education with instrumental music concentration. Must be taken concurrently with MUSC 407. Enables students to observe master teachers and to test accumulated teaching practices in elementary school instrumental classroom settings. (offered spring, odd years)

407. Music Education: Secondary Instrumental Methods. Lecture 2 hours; 2 credits. Prerequisite: MUSC 406. Required prior to student teaching for all students in music education with instrumental music concentration. Focuses on materials and methods of instrumental music instruction in the secondary setting. (offered fall, even years)

408. Music Education: Practicum (Secondary Instrumental). 1 credit. Prerequisite: ECI 301. Required prior to student teaching for all students in music education with instrumental music concentration. Must be taken concurrently with MUSC 407. Enables students to observe master teachers and to test accumulated teaching practices in secondary school instrumental classroom settings. (offered spring, odd years)

409. Music Education: Instrumental Techniques. Lecture 1 hour; 1 credit. Prerequisite: ability to read music or permission of the instructor. Designed to develop basic skills of playing and teaching the trumpet, which serves as a foundation for the other brass instruments. (offered fall, odd years)

264A. Music in History and Culture. Lecture and listening sessions 3 hours; 3 credits. A survey of major composers and their works in the historical context of different style periods, including a discussion of the central philosophical and cultural issues of each period. Students will be required to attend at least three musical events and turn in written critiques. Open to Honors College students only.

221-222. Music Theory. 221 is prerequisite to 222. Lecture 3 hours; 3 credits each semester. Prerequisite: music major or permission of the instructor. An introduction to music fundamentals: musical symbols, notation, reading, and keyboard harmony. An elementary course dealing with the fundamentals of music and its uses.

223-244. Ear Training, Sight Singing, and Dictation. 223 is prerequisite to 224. Lecture 1 hour; drill section 1 hour; 1 credit each semester. Prerequisite or corequisite: MUSC 221. Melodic dictation, recognition, and writing of various intervals and triads.

261, 262. Music Literature Survey. Lecture 1 hour; 1 credit each semester. Prerequisite: MUSC 108 or permission of the instructor. Written and oral presentation of the major works in music history and their historical context.

264A. Music in History and Culture. Lecture and listening sessions 3 hours; 3 credits. A survey of major composers and their works in the historical context of different style periods, including a discussion of the central philosophical and cultural issues of each period. Students will be required to attend at least three musical events and turn in written critiques.

301. Music Education: Trumpet Class. Lecture 1 hour; 1 credit. Prerequisite: students must display the ability to read music. Required of all instrumental music education students. Designed to develop basic skills of playing and teaching the trumpet, which serves as a foundation for the other brass instruments. (offered fall, odd years)

302. Music Education: Brass Class. Laboratory 2 hours; 1 credit. Prerequisite: MUSC 301 or permission of the instructor. Required of all instrumental music education students. Designed to develop basic skills of playing and teaching French horn, trombone, euphonium, and tuba. (offered spring, even years)

303. Music Education: Clarinet Class. Lecture 1 hour; 1 credit. Prerequisite: students must display the ability to read music. Designed to develop basic skills of playing and teaching the clarinet, which serves as a foundation for the other woodwinds. (offered fall, odd years)

304. Music Education: Woodwind Class. Laboratory 2 hours; 1 credit. Prerequisite: MUSC 303 or permission of the instructor. Designed to develop basic skills of playing and teaching flute, oboe, bassoon, and saxophone. (offered spring, odd years)

305. Music Education: Violin Class. Lecture 1 hour; 1 credit. Prerequisite: students must display the ability to read music. Designed to enable the prospective teacher to gain proficiency in the violin, the viola, and the cello, to understand various aspects of playing, and to evaluate effectively materials used in the instruction of this instrument. (offered fall, odd years)

306. Music Education: String Class. Laboratory 2 hours; 1 credit. Prerequisite: MUSC 305 or permission of the instructor. Designed to enable the prospective teacher to gain proficiency on viola, cello, and string bass, to understand problems and methods of teaching these instruments, and to evaluate effectively materials used in the instruction of each of these instruments. (offered spring, odd years)

307. Music Education: Percussion Class. Laboratory 2 hours; 1 credit. Prerequisite: students must display the ability to read music. Class lessons on all percussion instruments and the techniques and principles of effective teaching for these instruments. (offered fall, odd years)

of contemporary American music will be discussed. Written critiques of live performances and a research paper will be required.

466/566. Modern Music. Lecture 3 hours; 3 credits. Prerequisites: MUSC 361W and 362 or permission of the instructor. An examination of music and social unrest in such music as of the Baroque period to the present. Conducted as a seminar. Prerequisite: enrollment in a graduate program or permission of the instructor.

467. Musicology Seminar. Independent study and weekly meetings with the instructor; 3 credits. Prerequisite: senior and music major standing. An introduction to techniques and methods for research in various aspects of contemporary and student conduct investigations of selected topics and submit written reports of findings.

491/591. Music in the Baroque Era. Lecture 3 hours; 3 credits. Prerequisites: MUSC 361W-362. A study of music history from the Rococo Period through the works of Haydn, Mozart and Beethoven. A discussion of musical style within the context of cultural history.

492/592. Music in the Classical Era. Lecture 3 hours; 3 credits. Prerequisites: MUSC 361W-362. A study of music history from the late works of Beethoven to Mahler and Strauss. A discussion of musical style within the context of cultural history.

495/595, 496/596. Topics in Music. 1-3 credits each semester. Independent study, readings, and/or permission of the instructor. These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors.

497. 498. Tutorial Work in Special Topics in Music. 3 credits each semester: senior standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Directed study as approved by the instructor.

601. Advanced Theory Survey. Lecture 3 hours; 3 credits. Prerequisite: Baccalaureate degree in music or permission of the department chair and instructor. A review of melodic, harmonic, and contrapuntal elements of music through analysis and writing. The course will cover techniques from the eighteenth and nineteenth centuries, with only a brief survey of twentieth-century techniques.

602. Analytical Techniques. Lecture 3 hours; 3 credits. Prerequisites: Baccalaurate degree in music or permission of the department chair and instructor. This course involves the study of the philosophical, psychological and historical foundations of music related to curriculum development.

605. Literature of the Wind Ensemble. Lecture 3 hours; 3 credits. Prerequisite: Baccalaurate degree in music or permission of the department chair and instructor. This course centers upon the development of performance and instructional skills in various aspects of music education. May be repeated twice with different emphases.

614. Workshop in Instrumental Music. Lecture 1 hour; 1 credit. Prerequisite: Baccalaurate degree in music or permission of the department chair and instructor. This course centers upon the development of performance and instructional skills in various aspects of music education. May be repeated twice with different emphases.

615. Advanced Conducting Seminar. Lecture 3 hours; 3 credits. Prerequisite: Baccalaurate degree in music or permission of instructor or department chair. Involves conducting techniques as applied to various mixed ensembles. Emphasizes the technical considerations common to all phases of choral and instrumental conducting with special concern for school problems.

620. Literature for Strings and Symphony Orchestra. Lecture 3 hours; 3 credits. Prerequisite: Baccalaurate degree in music or permission of instructor or department chair. This course centers on repertoire criteria, score analysis, pedagogical issues, and programming for elementary through high school orchestras. The focus is on string literature, Grades 1 through 6, including standard repertoire, educational arrangements, new music, fiddle tunes and jazz. Sustained education for public school string teachers.

623. Arranging for Instrumental Ensembles. Lecture 3 hours; 3 credits. Prerequisite: passing the graduate theory placement test. A course focused upon the arranging of music for instrumental ensembles from trio, quartet, quintet, etc., to full band or orchestra. Techniques will be discussed in class. Students will design arrangements to implement these techniques. Final paper will be an arrangement for an ensemble of at least six parts.

636. Techniques of Jazz Education in the Classroom. Lecture 3 hours; 3 credits. An in-depth survey of software available for use in the classroom, including listening, stylistic and theoretical applications. A basic understanding of synthesizers and MIDI technology will be emphasized. The course will focus on a hands-on approach to the software and extensive laboratory time in the EMS will be required.

638. Techniques of Jazz Education in the Secondary School. Lecture 3 hours; 3 credits. This course will deal with practical techniques for the Jazz Ensemble, including articulation, style, phrasing, literature, and improvisational techniques. In addition, Jazz history and literature will be discussed in detail.

693. Vocal/Choral Arranging. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. This course is designed to develop the skills necessary to arrange a piece of vocal music for ensembles of various sizes and makeup. Techniques will be discussed at the end of the term in the Classroom. Lecture 3 hours; 3 credits. An in-depth survey of software available for use in the classroom, including listening, stylistic and theoretical applications. A basic understanding of synthesizers and MIDI technology will be emphasized. The course will focus on a hands-on approach to the software and extensive laboratory time in the EMS will be required.

697. Tests and Measurements in Music Education. Lecture 3 hours; 3 credits. Prerequisite: Baccalaurate degree in music or permission of the department chair and instructor. This course is designed to acquaint the student with tests and measurements used in the field of music education and the methods of designing and utilizing such measures.

695, 696. Topics in Music. 1-3 credits each semester. These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors.

697. Independent Study. 1-3 credits. Prerequisite: permission of the graduate program director. Designed for independent study and designed by student and instructor. May be repeated twice with different emphases.

731. Ensemble (Opera Workshop, Percussion, Piano, Guitar, String, Woodwind). 3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and permission of the instructor. Participation in rehearsals and public performances of the band.

733. Symphony Orchestra. Full orchestra 3 hours per week, and dress rehearsals TBA; 1 credit each semester. Prerequisites: approval to read music and permission of the instructor. Participation in rehearsals and public performances of the Symphonic Orchestra.

734. Jazz Ensemble. 1-3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

735. Pep Band. 1-3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

736. New Dominations. 1-3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

737. Collegium Musicum. 1-2 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

738. Madrigal Singers. 3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

739. Brass Choir. 3 rehearsal periods per week; 1 credit each semester. Prerequisite: ability to read music and/or permission of the instructor.

III. Applied Music Instruction — MUSA

All students wishing to register for applied music classes must have a placement audition prior to registration. Music Department majors and minors must be described in detail in the section entitled "College of Arts and Letters Degree Requirements." Students studying applied music for credit will perform before an examining committee at the end of each semester following their first semester of study at this institution.

Applied Music Major (Performance)

Ap. Mus. 151-152. One-hour lesson per week (summer: 2 one-hour lessons per week); 3 credits each semester. Prerequisite for 152: 151 and permission of faculty.


Ap. Mus. 231-252. One-hour lesson per week (summer: 2 one-hour lessons per week); 3 credits each semester. Prerequisites: previous number and permission of faculty. Course is designed to develop the skills necessary to perform an mini-concert of about 20 minutes. May be repeated twice with different emphases.

Ap. Mus. 331-332. Hour Lesson: Applied Composition. One hour lesson per week; 3 credits each semester. Prerequisites: MUSA 232 for MUSA 331; MUSA 331 for MUSA 332. Original work in composition starting with the smaller forms in both the vocal and the instrumental fields.

Ap. Mus. 351-352. One-hour lesson per week (summer: 2 one-hour lessons per week); 3 credits each semester. Prerequisites: previous number and permission of faculty.

[Designated for activity credit.]

*For these courses the student is charged the applied music fee of $175 for one-credit courses and $250 for two- or three-credit courses. Individual instruction in an applied music course is offered in guitar, harpsichord, piano, organ, voice, and the orchestral instruments. For information concerning fees for applied music, refer to "Fees and Expenses." Students in applied music are assigned to teachers by the department chair.
Naval Science — NVS

Professor J. A. Brown (Chair of the Department of Naval Science). Associate Professor R. Stouter. Assistant Professors E. Bronner, J. Labott, D. Petri and D. Posick.

101. Introduction to Naval Science. Lecture 2 hours; 2 credits. General introduction to sea power and the operational environment. Required for all members of the Navy. Prerequisite: None.

102. Naval Laboratory I. On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Oceanography, waves, tides, currents, satellite navigation, sonar, meteorology, basic electronics and naval history. Discussions of current events are included as guidelines for radiation protection and safe handling of radioactive material.

401. Nuclear Medicine Technology I. Lecture 4 hours; 3 credits. Prerequisite: NMED 351, CHEM 101N-102N or equivalent and permission of the program director. A course designed to cover the nuclear medicine procedures of the gastrointestinal, genitourinary, central nervous and skeletal systems. Relevant clinical procedures are also covered.

402. Nuclear Medicine Technology II. Lecture 4 hours; 3 credits. Prerequisite: NMED 401 and permission of the program director. A course designed to cover the nuclear medicine procedures of the respiratory, cardiovascular and endocrine systems. Relevant clinical procedures are also presented.

403. Radiopharmacy. Lecture 3 hours; 3 credits. Prerequisite: NMED 402 and permission of the program director. A course designed to cover the concepts and techniques related to the field of radiopharmacy The production, preparation and quality assurance of radiopharmaceuticals are presented.

410. Non-Imaging Nuclear Medicine Technology. Lecture 3 hours; 3 credits. Prerequisite: NMED 401 and permission of the program director. Clinical instruction in patient care, radiation safety and radiopharmaceutical administration, imaging and non-imaging techniques and quality assurance procedures. (qualifies as a CAP experience)

450. Clinical Nuclear Medicine Technology II. 9 credits. Prerequisites: NMED 440 and permission of the program director. Continued clinical instruction in diagnostic and therapeutic nuclear medicine procedures. (qualifies as a CAP experience)

475W. Administration and Management in Nuclear Medicine Technology. Lecture 3 hours; 3 credits. Prerequisite: admission to the radiation therapy program. This writing intensive course is designed to provide a review of the administration, management, policies, and practices relevant to nuclear medicine technology. The leadership, legal, ethical and planning aspects of operating a nuclear medicine department are covered.

495. Special Topics in Nuclear Medicine Technology. 3 credits. Prerequisite: permission of the program director. A study of selected current topics in nuclear medicine technology.
Nurse Anesthesia—NURA

These courses are coordinated through the School of Nursing.

650. Medical Physical Sciences. Lecture 3 hours; 3 credits. Prerequisites: admission to the program. Prepares the health care provider advanced practice nurse role on the health care team by providing an introduction to physics and biochemistry.

651. Pharmacology of Anesthesia Drugs. Lecture 4 hours; 4 credits. Prerequisite: NURA 650. Prepares the R.N. for a role on the anesthesia patient care team and in the administration of anesthesia by teaching a basic level of expertise in understanding and using anesthesia equipment in a competent and safe manner.

653. Principles of Anesthesia Practice II. Lecture 2 hours; 2 credits. Prerequisite: NURA 652. Prepares the R.N. for a role on the anesthesia patient care team and in the administration of anesthesia by teaching a basic level of expertise in understanding and using anesthesia equipment in a competent and safe manner.

654. Professional Aspects of Anesthesia. Lecture 3 hours; 3 credits. Prerequisite: admission to the program. A study of the unique goals, difference means, distinctive content, and role of health/anesthesia care and education in this country. Includes such areas as management, organization, legal aspects, professional adjustment, and ethics.

660. Pharmacotherapeutics for the Nurse Anesthetist. Lecture 3 hours; 3 credits. Prerequisite: admission to the program. A course designed to expand the graduate nurse anesthetist student’s understanding of pharmacological principles including pharmacokinetics and pharmacodynamics in the advance practice role of nurse anesthesia.

694. Advanced Physical Assessment for Nurse Anesthetists, Lecture 2 hours; laboratory 2 hours, 3 credits. Prerequisites: NURS 649, 647, NURA 652. Emphasis on physical assessment skills, interviewing skills, pathophysiological concepts, airway evaluation and management skills related to anesthetic care plan and decision making.

754. Anesthesia Practice. 4 credits. Prerequisite: NURA 652. Orientation to the operating room and anesthesia. Additional selected clinical experiences.

755-756-757-758. Clinical Practicum A,B,C,D. 6 credits for 755, 10 credits for 756, 757, 758. Each course consists of orientation to the Operating Room and the Anesthesia Department. Prerequisite: admission to the program. Provides actual general and regional anesthesia with qualified clinical instructors (Anesthesia Practitioners, N.P.). Weekly lecture and five-hour, four concurrent sessions include clinical conferences, journal club, and seminars dealing with current topics, including, but not necessarily limited to cardiovascular, pulmonary, obstetric, neuro, regional, obstetrical, pediatric, and special areas of anesthesia. Various special projects and competency examinations are required throughout the program.

759. Advanced CRNA Clinical Course. 12 credits. Prerequisite: B.S.N. degree with CRNA license. This advanced placement credit is awarded to the certified registered nurse anesthetist who has demonstrated knowledge of selected complex concepts necessary for the provision of anesthetic services.

Nursing — NURS

Associate Professors R. Benjamin (Chair of the School of Nursing), L. Garzon (Graduate Program Director), C. Houseman, L.L. Liley, K.L. Palmer (Undergraduate Program Advisor), C.M. Rulledge, and M.H. Smith, Assistant Professor, D. Taimui, P.D. Barham (Chief Academic Advisor), A. Campbell, C. Little, O.C. L.K. Bendl, K.A. Curry-Lourenco, P.M. Eaton, M.W. Jackson, A.M. Kelly, S.L. Murray, M.B. Nasselrod, B.A. Powers-Luhn, L.N. Saligan and A. Sweeney.

300. Introduction to Nursing Theories and Concepts I. Lecture 3 hours; 3 credits. Corequisite: NURS 302. Prerequisite: admission to the B.S.N. program. Emphasis is placed on concepts and theories underlying professional nurse-client communication.

301. Introduction to Nursing Theories and Concepts II. Lecture 3 hours; 3 credits. Corequisite: NURS 303. Prerequisite: NURS 300. This course emphasizes theories specific to nursing and their relevance to the practice of professional nursing.

302. Health Assessment Clinical Laboratory. 350.3. 6 hours. Prerequisite: NURS 300. This laboratory clinical course emphasizes the assessment phase of the nursing process. Skill acquisition in health assessment includes physical assessment, laboratory, and diagnostic procedures. Emphasis is on supervised practice, faculty demonstration, and self-paced learning in the audio-visual laboratory.

303. Fundamentals of Nursing Practice. Clinical experience 6 hours; 2 credits. Corequisite: NURS 301. This clinical course emphasizes the supervised application of the nursing process in clinical nursing techniques in clinical laboratory and acute care settings. (qualifies as a CAP experience)

305. Health Assessment Clinical. Lecture 3 hours; 3 credits. Prerequisite: admission to the B.S.N. program. This course emphasizes the physical assessment phase of the nursing process for registered nurses.

306. Theoretical Foundation of Professional Nursing Practice. Lecture 3 hours; 3 credits. Prerequisite: admission to the B.S.N. program or corequisite: NURS 401. This course focuses on selected nursing models, concepts, and theories as supporting frameworks for professional nursing practice. Emphasis is placed on nursing theory as a methodology for improving nursing practice in various client situations and practice settings. For registered nurses.

310. Therapeutic Diets I. Lecture 1 hour; 1 credit. Prerequisite: admission to the B.S.N. program. This course focuses on concepts and principles of diet therapy. Emphasis is placed on understanding the impact of various nutrients on the body.

311. Therapeutic Diets II. Lecture 1 hour; 1 credit. Prerequisite: NURS 310 or permission of instructor. This course builds upon NURS 310 and introduces the student to selected therapeutic diets placed on restrictive diets associated with maternal-infant and selected medical-surgical processes.

312. Therapeutic Diets Lecture 1 hour. Prerequisite: NURS 310, 311. This course focuses on therapeutic diets associated with selected medical/surgical and pediatric disease processes. Emphasis is placed on nutrient-devoid diets associated with maternal-infant and selected medical-surgical processes.

320. Adult Health Nursing I. Lecture 3 hours; 3 credits. Corequisite: NURS 321, prerequisite: junior standing in the B.S.N. program. This course focuses on therapeutic intnutrition of selected medical/surgical and pediatic disease processes. Emphasis is placed on the use of the nursing process to assist adults to adapt to the body's breakdown of defense mechanisms.

321. Clinical Management: Adult Health Nursing I. Clinical experience 6 hours; 2 credits. Corequisite: NURS 320. Prerequisite: junior standing in the B.S.N. program. This course focuses on therapeutic intnutrition of selected medical/surgical and pediatic disease processes. Emphasis is placed on the use of the nursing process to assist adults to adapt to the body's breakdown of defense mechanisms.

322. Clinical Management: Adult Health Nursing II. Clinical experience 3 hours; 1 credit. Corequisite: NURS 320, prerequisite: junior standing in the B.S.N. program. This course focuses on therapeutic intnutrition of selected medical/surgical and pediatic disease processes. Emphasis is placed on the use of the nursing process to assist adults to adapt to the body's breakdown of defense mechanisms.

323. Clinical Management: Childbearing Family. Clinical experience 3 hours; 2 credits. Corequisite: NURS 311. Prerequisite: junior standing in the B.S.N. program. This course focuses on therapeutic intnutrition of selected medical/surgical and pediatic disease processes. Emphasis is placed on the use of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness.

324. Nursing Care of Infants and Children. Lecture 2 hours; 2 credits. Prerequisite: NURS 374 and junior standing in the B.S.N. program. This course addresses drug therapy and continued application of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness.

325. Life Span and the Nursing Process II. Lecture 2 hours; 2 credits. Prerequisite: NURS 374 and junior standing in the B.S.N. program. This course addresses drug therapy and continued application of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness.

326. Research Nursing Process and Drug Therapy I. Lecture 2 hours; 2 credits. Prerequisite: STAT 130M. This course focuses on the theories and concepts utilized in the scientific investigation of nursing practice. Emphasis is placed on the development of skills necessary to be a consumer of nursing research.

327. Nursing Process and Drug Therapy II. Lecture 2 hours; 2 credits. Prerequisite: NURS 374 and junior standing in the B.S.N. program. This course addresses drug therapy and continued application of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness.

328. Research Nursing Process and Drug Therapy. Lecture 2 hours; 2 credits. Prerequisite: admission to the B.S.N. program. This course focuses on selected nursing models, concepts, and theories as supporting frameworks for professional nursing practice. Emphasis is placed on nursing theory as a methodology for improving nursing practice in various client situations and practice settings. For registered nurses.

329. Research Nursing Process and Drug Therapy. Lecture 2 hours; 2 credits. Prerequisite: admission to the B.S.N. program. This course focuses on selected nursing models, concepts, and theories as supporting frameworks for professional nursing practice. Emphasis is placed on nursing theory as a methodology for improving nursing practice in various client situations and practice settings. For registered nurses.

330. Nursing Care of the Childbearing Family. Lecture 3 hours; 3 credits. Corequisite: NURS 331. Prerequisite: junior standing in the B.S.N. program. This course focuses on therapeutic intnutrition of selected medical/surgical and pediatic disease processes. Emphasis is placed on the use of the nursing process as related to drug therapy for clinical situations involving individuals experiencing health deviations. Awarded upon completion of 14 credits in major. Registered nurse students only.

401. Career Pathway: Assessment. Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisite: admission to the B.S.N. program. This course focuses on basic skills required for success in the post-licensure baccalaureate nursing program. Emphasis is placed on career pathway assessment. Selected skills to be acquired include development of a professional portfolio, use of computers, APA professional writing format, library use and professional communication strategies. For registered nurses only.

402. Career Pathway: Development. Lecture 2 hours; laboratory 6 hours; 4 credits. Prerequisite: NURS 401. This course focuses on further development of the post-licensure baccalaureate nursing student with an emphasis on expanding critical thinking skills, teaching-learning theories and application, professional resume development and interviewing techniques, selection of career opportunities, and practice roles. For registered nurses only.

403. Career Pathway: Expanding Horizons. Lecture 2 hours; laboratory 6 hours; 4 credits. Pre-corequisite: all RNA registered nursing corequisite: NURS 401. This course focuses on the completion of a professional portfolio for the post-licensure baccalaureate nursing student. Emphasis is on advanced professional clinical experiences. This course utilizes the reflective process for professional role expansion and development. For registered nurses only.

420. Nursing Care of Infants and Children. Lecture 3 hours; 3 credits. Corequisite: NURS 421. Prerequisite: senior standing in the B.S.N. program. This lecture course provides the registered nurse caring for children of various ages. Emphasis is on the use of the
nursing process to assist children as they encounter acute and chronic illness. The nurse’s communication with and education of the family as individuals and as a group are discussed as means of achieving the goal of comprehensive individualized care in the home and in health care settings.

421. Clinical Management of Infants and Children. Clinical experience 6 hours; 2 credits. Corequisite: NURS 420. Prerequisite: senior standing in the B.S.N. program. This clinical course emphasizes the provision of nursing care to infants and children suffering from acute and chronic illnesses. The nurse’s role in the health care plan is to provide and coordinate care, serving as client advocate. Students are expected to demonstrate responsibility for personal and professional conduct toward the practice of nursing. (qualifies as a CAP experience)

423. Nursing and the Gerontological Client. Lecture 2 hours; 1 credit. Corequisite: NURS 441. Prerequisite: senior standing in the B.S.N. program. This capstone clinical course allows students to practice in selected areas. The focus of this practicum is to enhance the clinical decision making and nursing intervention skills of the senior student. (qualifies as a CAP experience)

440. Nursing Process in Rehabilitation. Lecture 2 hours; 2 credits. Corequisite: NURS 451. Prerequisite: senior standing in the B.S.N. program. This course focuses on the use of the nursing process to prevent further dependence and restore maximum levels of function to the client who has a physical disability.

441. Clinical Management of Rehabilitation Clients. Clinical experience 6 hours; 2 credits. Coreerequisite: NURS 440. Prerequisite: senior standing in the B.S.N. program. This clinical course emphasizes the provision of nursing care to clients with disabilities and the use of the nursing process to critically ill clients who require assistance in adapting to their condition.

450. Adult Health Nursing III. Lecture 3 hours; 3 credits. Corequisite: NURS 451. Prerequisite: senior standing in the B.S.N. program. This clinical course provides the opportunity to practice nursing care to clients who are critically ill. Through the use of the nursing process, students will provide and coordinate care and serve as client advocates in a variety of critical care settings. (qualifies as a CAP experience)

464. Developing Case Management Skills: Clinical Pathways and Outcomes. Lecture 3 hours; 3 credits. Prerequisite: admission to the B.S.N. program. The focus of this course is twofold: exploration and discussion of the relationship of the health care system to the outcomes of care and value of case management, clinical pathways and clinical outcomes measurement in nursing practice; and the practice application of the principles of case management, the development of clinical paths, and outcomes measurement.

470. Community Health Nursing I. Lecture 1 hour; clinical 3 hours; 2 credits. Prerequisite: senior standing in the B.S.N. program. This course focuses on family and community health care. Content includes the identification and use of resources, and the importance of families and communities and the use of the nursing process to assist in promoting and maintaining health. Application of course concepts through experience and interactions with health care coalitions is emphasized.

471. Community Health Nursing II. Lecture 1 hour; clinical experience 3 hours; 2 credits. Prerequisite: senior standing in the B.S.N. program. This course focuses on family and community health care. Content includes the identification and use of resources, and the importance of families and communities and the use of the nursing process to assist in promoting and maintaining health. Application of course concepts through experience and interactions with health care coalitions is emphasized.

487W. Leadership and Management. Lecture 3 hours; 3 credits. Prerequisites: NURS 400, 410. This course focuses on leadership and management within the health care setting. Focuses on management issues and responsibilities of new graduates. Emphasis is on decision-making, role development, motivation, delegation, evaluation, conflict and change. An honors version of NURS 480W. Open to Honors College students only.

489. Transition to Professional Nursing Practice. Clinical experience 6 hours; 2 credits. Prerequisites: senior standing in the B.S.N. program and admission to the B.S.N. program. This course allows students to practice in selected areas. The focus of this practicum is to enhance the clinical decision making and nursing intervention skills of the senior student. (qualifies as a CAP experience)

490W. Nursing Leadership. Lecture 3 hours; 3 credits. Prerequisite: admission to the B.S.N. program. This course focuses on utilization of strategies from leadership, management, systems and change theories to facilitate professional nursing practice. Emphasis is placed on the professional nurse as a leader in the health care system. The influence of organizational behavior, proactive political action, professional image and place on nursing practice is examined. For registered nurse students only.

492. Community Health Nursing. Lecture 3 hours; 3 credits. Prerequisites: admission to the B.S.N. program. This course focuses on the use of the nursing process to assist in promoting and maintaining health. Application of course concepts through experience and interactions with health care coalitions is emphasized.

494/495. Advanced Physical Assessment. Lecture 2 or 3 hours (2 hours lecture; 3 hours lab). Prerequisite: NURS 302, 305 or permission of the instructor. Emphasis is on advanced interviewing skills, pathophysiologic assessment, and comprehensive physical assessment skills with an emphasis on primary care decision making.

495/496. Topics in Nursing. 1-3 credits. Prerequisite: Permission of instructor. This course provides the opportunity to select topics that may not be offered regularly. Special topics will appear in the schedule of classes booklet each semester.

511. Advanced Nursing Practice. Lecture 2 hours; 2 credits. Corequisite: NURS 450. This advanced placement credit is awarded to the registered nurse who has demonstrated knowledge of selected complex nursing concepts for the provision of nursing care to individuals and families experiencing health deviations. Awarded upon completion of 26 credits in the major. For registered nurse students only.

608. Clinical Nurse Specialist: Roles and Responsibilities I. Lecture 3 hours; 3 credits. This course introduces the five component roles of a clinical nursing specialist and explores the roles of clinician and teacher in depth. Theories which influence the development of the CNP role are highlighted. (qualifies as a CAP experience)

610. Theoretical Foundations for Nursing Practice. Lecture 3 hours; 3 credits. This course focuses on the theoretical underpinnings that form the basis of nursing practice. Theories of nursing models, concepts, and theories as the supporting framework for professional nursing practice. Emphasis is placed on the broad range of nursing models, concepts, and theories to various client populations and nursing practice settings. Students are expected to support complex nursing concepts for the provision of nursing care to individuals and families experiencing health deviations. Awarded upon completion of 26 credits in the major. For registered nurse students only.

615. Leadership and Management. Lecture 3 hours; 3 credits. Corequisite: NURS 608. Prerequisite: admission to the B.S.N. program. The focus of this course is twofold: exploration and discussion of the relationship of the health care system to the outcomes of care and value of case management, clinical pathways and clinical outcomes measurement in nursing practice; and the practice application of the principles of case management, the development of clinical paths, and outcomes measurement.

616. Research Design. Lecture 3 hours; 3 credits. Prerequisite: NURS 611. This course describes and provides for the development and implementation of various statistical methodologies. Tool development and technologies for presentation of data are explored.

647. Baccalaureate Nursing Education. Lecture 2 hours; 2 credits. Corequisite: NURS 634. The introduction to the development of entry-level nursing curricula and the influence of common health problems is also a focus.

648. Nursing Curriculum Design and Course Development. Lecture 2 hours; 2 credits. Corequisite: NURS 634. This course describes and provides for the development and implementation of various common health problems is also a focus.

652. Advanced Nursing Practice I. Lecture 2 hours; 2 credits. Corequisite: NURS 647. This graduate course is designed to provide in-depth knowledge of the role of the advanced nursing practice role in a chosen focus area. The course emphasizes the analysis and application of the students’ role as the basis for advanced practice of nursing. This course provides the opportunity for students to select a site for the completion of this experience.

654. Structure and Function for Advanced Nursing Practice I. Lecture 2 hours; 2 credits. Corequisite: NURS 634. This course is designed to provide in-depth knowledge of the role of the advanced nursing practice role in a chosen focus area. The course emphasizes the analysis and application of the students’ role as the basis for advanced practice of nursing. This course provides the opportunity for students to select a site for the completion of this experience.

656. Disease Processes for Advanced Practice Nursing. Lecture 3 hours; 2 credits. Prerequisite: NURS 611. This course provides the opportunity for students to select a site for the completion of this experience.
Adult Focus. Lecture 3 hours; 3 credits. Prerequisite: NURS 661. This capstone course focuses on the synthesis of previous learning experiences and the development of professional skills. Content includes successful models of care and models of collaborative practice in pediatrics.

65. M.S.N. Experiential Learning. The Master of Science in Nursing comprehensive examination offers the student an opportunity to synthesize the learning experiences in the program. The examination is composed of mastery of program outcomes in critical thinking, advocacy, leadership, advance practice, and education. The student must achieve a passing score on the comprehensive examination to successfully complete the M.S.N. degree.

69. Topics: Independent Study. 1-3 credits.

68. Advanced Practice Nursing. Lecture 2 hours; 2 credits. Corequisite: NURS 787. Prerequisites: NURS 658, 661, 663, 664, 667, 671, 672, 714, and 716. This course focuses on the development of advanced practice skills in the care of women.

65. Advanced Nursing Practice in Women's Health. Clinical experience 2 hours; 2 credits. Corequisite: NURS 787. Prerequisites: NURS 658, 661, 663, 664, 667, 671, and 714. This course explores the integration of advanced practice skills in the care of women including health promotion, illness management, and reproductive needs.

66. Pharmacotherapeutics for Primary Health Care Providers. Lecture 3 hours; 3 credits. Prerequisite: admission to the program. This course provides an in-depth understanding of the pharmacology of the medications used in the practice of family nurse practitioner. Completion of this course is required for certification as a family nurse practitioner and eligibility for the American Nurses Credentialing Center Examination for Family Nurse Practitioners (FNP). Corequisites: NURS 661, 663, 664, 665, 671, 672, 705, 714, and 762. The course focuses on the family nurse practitioner’s role in primary health care problems in the pediatric population. Emphasis is placed upon assessment and management of health and illness in children.

714. Family and Community Focused Primary Care. Seminar 2 hours; 1 credit. Prerequisites: admission to the FNP program and NURS 661. Focus on assessing psycho-social problems in primary care setting. Students will develop skills in assessing the most common psychosocial problems and the family dynamics related to these problems. Assessment of the patient in the context of family and community. The course is designed to provide basic skills for effective management of common chronic problems and illnesses.

724. Management of Chronic Problems and Illnesses. Lecture 3 hours; 3 credits. The focus of this course is on the management of chronic and acute illness in children.

730. Entrepreneurship for the Advanced Practice Nurse. Lecture 3 hours; 3 credits. Prerequisite: admission to the program. This course provides an overview of the role of the advanced practice nurse in managing and operating a successful advanced practice practice in primary care. Students will develop an understanding of the principles of business and management and learn how these principles are applied to envision market change for health care systems.

735. Organizational Leadership. Lecture 3 hours; 3 credits. Prerequisite: Admission to the M.S.N. program. This course is designed to develop the leadership skills necessary to successfully implement innovative programs in health care organizations. Students will be expected to develop a plan for the integration of primary care skills in advanced nursing practice.

762. Advanced Family Nursing I: Management of Acute Illnesses. Lecture 20 hours; 5 credits. Prerequisites: NURS 661, 663, 664, 665, 671, 672, 705, 714, and 762. This course focuses on the accurate diagnosis and management of common chronic health problems within the primary care setting for the family nurse practitioner (FNP). Corequisites: NURS 661, 663, 664, 665, 671, 672, 705, 714, and 762. The focus of this course is on the accurate diagnosis and management of common chronic health problems within the primary care setting for the family nurse practitioner (FNP).

78. Nursing Seminar in Complex Health Problems. Seminar 2 hours; 1 credit. Corequisites: NURS 765, 767. Prerequisites: NURS 613, 640, 705, 764. The focus of this seminar course is to develop clinical topics with an emphasis on the integration of primary care skills in advanced nursing practice.

780. Financial Issues in Nursing Administration. Lecture 3 hours; 3 credits. Corequisites: NURS 617 and 640. Prerequisites: NURS 616, 735. This course focuses on planning, designing, and monitoring of a nursing budget with special emphasis on human resource acquisition, cost accounting, and capital equipment budgeting. Specific financial problems of a nursing service department are addressed.

787. Advanced Practice Nursing. Lecture 3 hours; 3 credits. Corequisite: NURS 659. Prerequisites: NURS 658, 661, 663, 664, 667, 671, 714, and 762. This course focuses on the advanced nursing management of perinatal health for women.

795/895. Topics. 3 credits. Prerequisite: Ph.D. standing or permission of the instructor. Designed to provide the advanced student with an opportunity to investigate specific topics of current interest in the health services.

### Occupational and Technical Studies

**Professor J.M. Ritz, (Chair and Graduate Program Director of the Department of Occupational and Technical Studies).** Associate Professors W.F. Deal, III (Technology Program Leader). H.B. Ndahi and J.E. Turner. Assistant Professor P.A. Reed. Senior Lecturer D.L. Netherton (Marketing Program Leader). Lecturer S. R. Davis.

### Occupational and Technical Education — OTED

297. Observation and Participation. 1 credit. Prerequisite: Permission of Professor and沽师。 A student must observe middle and/or high school classes for 30 clock hours. Assist teachers and students in practical settings. Relate principles and theories to actual practice in the classroom and schools. Attend seminars related to contemporary school practices. Qualifies as a CAP activity.

304. Laboratory Organization and Management. 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Principles of laboratory planning and management are the foundation of this course. Equipment selection, placement, and utilization, as well as the identification and control of conditions that result in efficient laboratory administration, are emphasized.

305. Curriculum for Technology Education. Lecture and discussion 3 hours; 3 credits. Prerequisites: OTS 251D and junior standing. National and state trends in instructional curriculum. Current secondary technology courses, content, activities, and facilities are planned. Competency-based and standards-based educational methods are stressed.

306. Methods for Technology Education. Lecture and discussion 3 hours; 3 credits. Prerequisites: OTS 251D and junior standing. A practical study and application of recommended methods for teaching technology education. Students plan and present micro-lessons; videotaped micro-teaching demonstrations are included. They also learn to organize and direct student groups in laboratory management.

400/500. Instructional Systems Development. Lecture 3 hours; 3 credits. Corequisites: NURS 640 and 641. Prerequisite: senior standing. Students learn how to design and develop classroom instructional materials including classroom and laboratory curricula and instructional technology. Skills in this area include the selection and use of materials, including media and computer technology and evaluation.

*Additional fee of $250 required.

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of pupil performance. Training specialist students learn to develop instructional materials using the instructional systems design and technology instructional materials. Students learn to plan instruction, the implementation of competency-based and standards-based education, and how to manage a program of instruction. Technical education technical education curriculum guides.

401/501. Foundations of Career and Technical Education. 3 credits. Prerequisite: junior standing. This course is designed to teach career and technical education majors how to plan, develop, and administer a program of instruction. This technical education technical education curriculum guides high school students and adults. Students also develop an understanding of the historical and sociological foundations underlying the role, development and organization of public education in the United States.

403/503. Methods in Career and Technical Education. Lecture 3 hours. Prerequisite: 401/501. Methods in Career and Technical Education. This course studies methods of teaching career and technical education including the use of video and slide presentation. Video-taped micro-teaching demonstrations are included. The course should be taken the semester prior to student teaching.

408/508. Advanced Classroom Issues and Practices in Career and Technical Education. Lecture 3 hours; 3 credits. Prerequisite: junior standing and passing scores on PRAXIS I or State Board of Education-approved SAT scores. An overview of classroom issues and practices for prospective career and technical teachers. The course covers classroom management, communication processes, reading in the content area and child abuse and neglect. Students learn classroom management, communication, and alternative teaching strategies for serving students with special needs. Students visit schools for student observation.

484/584. Reading for Mentored. 12 credits. Prerequisites: completion of the approved teacher education program in the major area, departmental approval, and permission of the advisor. Reading for Mentored. This course includes the use of study guides and the administration of career and technical education. Students apply content and methodology. The student is supervised by a school mentor and a career and technical education advisor. The course is for newly hired teachers on provisional contracts.

485. Student Teaching. Five days per week, full semester; 12 credits. Prerequisites: completion of the approved teacher education program in the major area, departmental approval, passing scores on PRAXIS I or State Board of Education-approved SAT scores, passing scores on the appropriate PRAXIS II content examination and permission of the director of teacher education services. Available for pass/fail grading only. (qualifies as a CAP experience)

486/586. Middle School Student Teaching for Technology Education. 6 credits. Prerequisites: OTED 305, 306, 408, ESSE 413 and OTS 450; or OTED 508, 596, 730, 788, ESSE 513, ECI 569, 616 for graduate students. Middle School Student Teaching for Technology Education. Students apply content and methodology under the supervision of a cooperating teacher and university supervisor. The student is supervised by a school mentor and a career and technical education advisor. Available for pass/fail grading only. (qualifies as a CAP experience)

488. High School Student Teaching for Technology Education. 6 credits. Prerequisites: OTED 305, 306, 408, ESSE 413, OTS 450, passing scores on PRAXIS I or State Board of Education-approved SAT scores, and passing scores on the appropriate PRAXIS II content examination. Classroom placement for student teaching in a high school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. (qualifies as a CAP experience)

496/596. Topics in Career and Technical Education. 1-3 credits each semester. Prerequisite: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work in subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Topics in Career and Technical Education. The course is designed to explore the evolution of technology, its major systems and implications. Based on the Standards for Technological Literacy.

606. Vocational Evaluation Processes. Lecture 3 hours; 3 credits. This course includes the basic concepts and techniques in vocational evaluation and career assessment services, the use of vocational interviewing, individualized service planning, report development, and the uses of multimedia and video. Students practice specific assessment techniques and skills and the processes used in vocational evaluation and career assessment. Focus is on planning, interviewing, and training analysis, work samples and systems, situational and community-based assessment, behavioral observation, and applying the results of training and career assessment.

635. Research Methods in Occupational and Technical Studies. 3 credits. Types of research, selection of problems, location of educational information, collection and classification of data, organization, presentation, and interpretation of findings. The focus is on conducting research in the career and technical area.

636. Problems in Occupational and Technical Studies. 3 credits. Prerequisite: OTED 635. Taken in the last year of study, this course is designed to use the information and statistical and analytical techniques in solving problems in occupational and technical studies related to secondary, community college and workforce needs. Approaches include qualitative and quantitative methodologies.

695, 696, 795, 895. Topics in Occupational Education. 1-3 credits each semester. The OTS department offers selected topics designed to permit groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Topics in Occupational Education. The course is designed to explore the evolution of technology, its major systems and implications. Based on the Standards for Technological Literacy.

698. Thesis in Occupational Education. 3-6 credits. Prerequisite: permission of the advisor. Research and writing in the major area, and scheduled conferences with the candidate’s advisor.

730/830. Introduction to Technology. 3 credits. Order and systems of technology. The course involves identifying and analyzing the component parts and examining technical means as critical variables in the affairs of humankind. Based on the Standards for Technological Literacy.

731/831. Technical Systems. 3 credits. Analyze the technical concepts common and unique to the technical systems as critical variables in the affairs of humankind. Based on the Standards for Technological Literacy.

732/832. Program Development for Technology Education. 3 credits. Plan and develop effective program in technology related activities. Focus is on identification and development of resources, activities, and materials for classroom programs.

750/850. Trends and Issues in Training: Modeling and Simulation. Lecture 3 hours; 3 credits. This course is designed to explore the issues and trends in developing and implementing technology-based training with emphasis on modeling simulation.

760/860. Trends and Issues in Occupational Education. Lecture 3 hours; 3 credits. Trends in philosophy, workforce needs, curriculum and teaching procedures in occupational and technical education. Analysis of research findings and issues related to tech prep and other articulated programs being developed in secondary schools, community colleges, and four-year institutions.

761/861. Foundations of Adult Education and Training Administration. 3 credits. This course is a study of adult education and training in many settings including the community college, business, industry, labor, government, the military and non-profit organizations of many types. The course is intended for adult education and training administrators.

762/862. Administration and Management of Education and Training Programs. Lecture 3 hours; 3 credits. This course deals with organizational policy, human and financial resources, facilities, and the planning process as applied to occupational education and adult education programs.

765/865. Trends and Issues of Economic and Workforce Development. Lecture 3 hours; 3 credits. Prerequisites: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work in subjects of economic and workforce development. Trends and Issues of Economic and Workforce Development. The course is designed to explore the evolution of technology, its major systems and implications. Based on the Standards for Technological Literacy.

780/880. Administration and Supervision of Occupational Education. Lecture 3 hours; 3 credits. Study of the principles of administering and supervising occupational education programs.

785/885. Curriculum Development in Occupational Education. Lecture 3 hours; 3 credits. A course designed to prepare students to design and develop curriculum for occupational education and training courses and programs. Includes the calculation of secondary and community college and workforce needs.

788/888. Instructional Strategies and Innovations in Training and Occupational Education. Lecture 3 hours; 3 credits. Learning and teaching styles are considered as a basis for developing instructional strategies to maximize occupancy and technical education at all levels, including secondary, the community college, and senior institutions. Relevant learning theories and knowledge of self, learning styles, and technologies are intended to enhance the participants’ instructional strategies.

789/889. Instructional Technology in Education and Training Administration. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. The course is designed to explore the application of electronic media to the instructional process. Topics include computer applications, interactive video, computer-based instruction, computer output, and visual aid production.

790/890. Practicum in Occupational Education. Lecture 3 hours; 3 credits. Prerequisite: permission of the graduate program director. Individually prescribed instruction under the supervision of a graduate faculty member designed to professionally fulfill development of graduate candidates.

797/897. Independent Study in Occupational Education. Lecture 3 hours; 3 credits. Prerequisite: permission of the advisor. Supervised assignment to an agency operating an occupational education or training program.

899. Dissertation in Occupational Education. 1-12 credits. Prerequisites: completion of the general requirements, and permission of the advisor. The course is designed for students pursuing majors in the College of Business and Public Administration.

102. Advertising and Promotion. Lecture 3 hours; 3 credits. This is an introductory course designed to teach the fundamental product and service promotion processes of planning and producing advertising and promotion campaigns. The course is not intended for students pursuing majors in the College of Business and Public Administration.

110T. Technology and Your World. Lecture and applications 3 hours; 3 credits. An overview of the resources and systems of technology. Emphasis on impacts that technology has on individuals and their careers. Activities explore the evolution of technology, its major systems and their impact in industrial society.

112. Communication Design. Lecture 1 hour; laboratory 5 hours; 3 credits. A course that explores the buyer’s responsibilities, customer wants and needs, vendors and merchandising sources, buying plans, merchandising control and use of technology in merchandising. Not intended for students pursuing majors in the College of Business and Public Administration.

220. The Fashion Industry. 3 credits. Course is designed for marketing education and fashion students. It covers fashion as a force which alters patterns of dress and growth in the fashion industry, to include fashion designers, manufacturers, buyers, retailers, and customers. Students explore the latest trends in style and materials.

221. Industrial Materials. Lecture 1 hour; laboratory 5 hours; 3 credits. A study of materials used by industry to produce products. Emphasis is on the study of ceramics, plastics, composites, and biotechnological materials. Students learn materials identification, use and processing.

231. Materials and Processes Technology. Lecture 1 hour; laboratory 5 hours; 3 credits. A study of the production processes used with metallic and forest product materials. Emphasis is on the study of processes, including processing into standard stocks are also covered. Students learn properties, uses and processing of metal and wood materials.

241. Energy Systems: Basic Electricity. Lecture 1 hour; laboratory 5 hours; 3 credits. A study of direct and alternating current. Introduction to electrical technology. Activities include experiments and projects to supplement
387. Cooperative Education. 1-3 credits (may be repeated for credit). Prerequisite: approval by the department. Students gain practical experience by participating in the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation in the cooperative education experience is an essential part of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education office. Each student in the semester in which the work experience is to take place. (qualifies as a CPA experience)

389. Design Technology and Society. (writing intensive course) Lecture 3 hours; 3 credits. Prerequisites: junior standing or permission of the instructor. A multidisciplinary course designed to help students understand the functional, historical, and contemporary nature of technology as an area of human knowledge. Attention is given to the positive and negative aspects of technology and how they affect society.

392. Industrial Design. Lecture 3 hours; 3 credits. Prerequisite: junior standing. A course designed to apply principles of space plan, aesthetics, construction techniques, and energy-efficient building methods as they apply to residential and commercial structures.

398. Education and Training of Adults. Lecture 3 hours; 2 credits. Prerequisite: junior standing or permission of the instructor. A course designed to provide insight into the fundamental, historical, and economic impacts of manufacturing and constructed systems. Students will research and design construction systems. Students will research and design products representative of today's industrial technological society. Emphasis will be placed upon design methodology, aesthetic value, and design thinking.

408. Architecture. Lecture 3 hours; 3 credits. Prerequisite: junior standing. A course designed to apply principles of space plan, aesthetics, construction techniques, and energy-efficient building methods as they apply to residential and commercial structures.

415. Advanced Merchandising. Lecture 3 hours; 3 credits. Prerequisites: OTS 208, 251D, ACCT 201. Designed to develop a student's ability to present basic instructional presentation techniques and methods applicable to business, government, and industrial organizations. Emphasis is on training adults. It involves videotaped micro-teaching demonstrations.

423/523. Visual Merchandising and Display. Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. A course designed to introduce students to the best practices and effective strategies in visual merchandising. It will provide a basic framework with practicing professionals and construct visual displays that enhance the selling of merchandise and the business. (qualifies as a CAP experience)

424/524. Fashion, Textiles, and Construction Analysis. Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course explores information related to new technological advances in the textile/apparel industry and determines consumer preferences, trends, and ideas. It includes the development of standards for judging qualities of merchandise. Fabrics are examined to determine the value they provide to the apparel and accessories customer.

430/530. Technology Applications in Training. Lecture 3 hours; 3 credits. Prerequisites: junior standing or permission of the instructor. This course is designed to prepare training professionals to plan and conduct training using computer systems. The course content includes the computer system, software, and hardware that trainers need so that they can teach basic computer and information skills in business, industry and government.

431/531. Internet-Based Fashion Business. Lecture 3 hours; 3 credits. Students will learn to conduct, design, and develop an Internet-based business. This course examines the application of electronic commerce principles to market fashion products and services over the Internet. Students will learn to conceive, research, plan, instruct, and maintain an Internet fashion business including developing a functioning web site.

450/550. Assessment, Evaluation and Improvement. Lecture 3 hours; 3 credits. Prerequisites: junior standing. This course prepares training and educational professionals to plan, implement, and evaluate instructional programs, evaluate individual learning, measure program effectiveness and efficiency, and evaluate the return on investments of training courses and programs.

471/571. Communication Industries. Lecture 3 hours; 3 credits. Prerequisites: junior standing and industrial technology major for 471. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative communication industries from the local region. (qualifies as a CAP experience)

472/572. Construction Industries. Lecture 3 hours; 3 credits. Prerequisites: junior standing and industrial technology major for 472. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative construction industries from the local region. (qualifies as a CAP experience)

474/574. Service Industries. Lecture 3 hours; 3 credits. Prerequisites: junior standing and industrial technology major for 474. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative service industries from the local region. (qualifies as a CAP experience)

481. Occupational Career Transition. Lecture 3 hours; 3 credits. Prerequisites: OTS 251D. To provide the senior-level student majoring in Occupational and Technical Studies with the skills and techniques necessary to bridge the gap between to career preparation and the professional and personal growth and development that will transfer into today's job market.

485/585. Topics in Occupational Education. 1-3 credits each semester. Prerequisite: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest. These classes will be available for pass/fail grading only. Student work is supervised by a job supervisor and the course instructor in a cooperative effort. Must complete a job package that describes all aspects of the organization. (qualifies as a CAP experience)

491. Ocean, Earth and Atmospheric Sciences


495/595. Topics in Occupational Education. 1-3 credits each semester. Prerequisite: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

499/599. Topics. 1-6 credits.

497/597. Independent Study in Occupational Education. 1-6 credits. Prerequisite: permission of the instructor.
course relates the principles of natural science to Earth as a planet, its resources, and its environment. The effects of geologic processes are stressed. In 112N, evolution of the continents, ocean basins, mountain chains, and the major life forms throughout Earth’s history are studied. Emphasis is placed on the physical and biological changes which have caused them. A student receiving credit for 111N cannot receive credit for 110N.

111N. Principles of Geology. Lecture 3 hours; laboratory 2 hours; 3 credits. 111N introduces the student to the study of the materials, structures, and processes of Earth. Present and ancient resources are interpreted in terms of the internal and surface processes that formed them. In 112N, evolution of the continents, ocean basins, mountain chains, and the major life forms throughout Earth’s history are studied. Emphasis is placed on the physical and biological changes which have caused them. A student receiving credit for 111N cannot receive credit for 110N.

120K. Earth Systems. Lecture 3 hours. 3 credits. This is an introductory course on Earth which relates plate tectonic processes and the Rock Cycle in the formation and evolution of the Earth, its resources, and the human environment. Emphasis is placed on the effects of the oceans, the atmosphere, and the moon upon the lithosphere. Students cannot receive credit for both 120K and either 110N or 111N.

122K. Dinosaurs and Evolution. Lecture 3 hours; 3 credits. An introduction to the major questions in paleontological studies. How do the geological record and the fossil record relate to the geological and biological processes that have shaped the earth’s history? Students will also discuss the philosophical impact of the discovery of fossils and evolution.

210. Environmental Earth Science. Lecture 3 hours; laboratory 2 hours; 4 credits. Dynamic processes of the land, ocean, and atmosphere and how they affect people. Topics include plate tectonics, mineral and water resources, weather and climate; tides and currents; limits to natural resources. GEOL 210 is a required course for the IDS program in Early Childhood Education.

300. Geology of Virginia, 3 credits. Prerequisites: GEOL 110N or 111N and 112N. Discussions will focus on the distribution of rocks, geologic resources and hazards in Virginia and geologic history of the commonwealth. Four-day field trip is required in order to study selected rock exposures. Appropriate trip expenses for lodging and food will be required. Does not satisfy geology major degree requirements.

302K. Environmental Geology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: GEOL 110N. Principles of geologic, environmental and meteorologic processes affecting the earth as a planet, its resources, and its environment.

313. Mineralogy. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: CHEM 115N. Corequisite: PHYS 111N or 231N. Thirteen kinds of minerals are discussed. Laboratory exercises include mineral identification by physical and optical properties, X-ray diffraction, and crystal culture.

314. Petrology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: GEOL 313. The study of petrology is development of mineralogy. Concepts of crystal growth, phase equilibria, mineral associations, and composition of the Earth’s crust and mantle. Laboratory exercises include hand specimen preparation, as well as the use of X-ray diffraction and origin of rocks.

315. Rocks and Minerals. Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisites: CHEM 115N, GEOL 110N or 111N, and GEOL 112N and MATH 163. This is a general course in earth materials for science majors. Study of minerals including their chemical composition and crystal classification. Processes of rock formation provide the framework for study of rocks. Some exercises focus on techniques for ion exchange, geologic sciences. The lecture, emphasis is on chemical and physical processes in laboratory, priorities are mineral and rock identification. Not approved for majors in the Geology Track.

435/535. Micropaleontology. Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisites: 12 hours of geology prerequisite: 75/85 in Geology of Microorganisms, concentrating on important groups such as conodonts, foraminifers, and other fossil groups. Recent and Cenozoic geologic and oceanographic studies.

442. General Meteorology. Lecture 3 hours; 3 credits. Prerequisite: GEOL 303W or GEOL 344W. Course contains an introduction to meteorology, including the atmosphere, weather, air masses, fronts, and cyclones; ice and water precipitation; hurricanes, tornadoes, and thunderstorms; introduction to modern weather forecasting; weather modification and air pollution.

444/544. Problems in Surficial Geology. Lecture 3 hours; 3 credits. Prerequisite: GEOL 344W. Geologic and oceanologic studies are applied to marine and terrestrial systems. Weekend field trips to study landscapes and deposits in the coastal plain and Appalachian Mountains. 450/550. Field Methods. Lecture 1 hour; laboratory 2 hours; 2 credits. Prerequisites or corequisites: GEOL 313, 314, 320, 325, and 344W. Course work and field experiences will be arranged for a specific Earth science topic or problem area. Hands-on experience is obtained with a variety of field equipment.

456/556. Introduction to Seismology. Lecture 3 hours; 3 credits. Prerequisite: GEOL 211 and 212. Global occurrence of earthquakes and their effects are presented; causes of earthquakes will be discussed; various kinds of seismographs and their use; earthquake insurance, building codes, and protective measures, and problems of earthquake prediction and modifications will be presented. Siting of important structures will be considered.

487. 488. Honors Research in Geology. Independent studies and scheduled meetings with faculty advisor; 1-3 credits. Prerequisites: permission of the instructor. Students gain on-the-job work experience related to contribution to the academic Honors Program. Supervised geological study in a field of individual interest. Research reports are submitted in a public oral presentation and a thesis.

495/595. Selected Topics. 1-4 credits. Prerequisite: permission of the instructor. Topics selected each semester to be announced in the course schedule.

496/596. Selected Topics. 1-4 credits. Prerequisite: permission of the instructor. Laboratory topics selected each semester to be announced in the course schedule.

497/597. Special Problems and Research. 1-3 credits. Prerequisite: permission of the instructor. Topics selected each semester to be announced in the course schedule.

610. Geology for Environmental Scientists. Lecture 3 hours; 3 credits. Prerequisites: GEOL 111N-112N. Geologic principles and techniques needed by professionals in the environmental science industry. Topics may include surface and groundwater flow, water quality, soil properties, desiccation and erosional processes, and sampling techniques. Weekend field trips required. Designed for scientists with limited background in geology. 611. Independent study. 1-3 credits. Prerequisites: GEOL 111N-112N. Soil and contaminant properties, soil-water interaction, soil permeability, contaminant-soil interactions, water and contaminants, and the role of the subsurface zone of inorganic and organic contaminants are discussed.

620. Hydrogeologic Modeling. Lecture 3 hours; 3 credits. Prerequisites: GEOL 314 and 411/511. Laboratory 2 hours; 3 credits. Prerequisite: CHEM 115N-116N and 112N or 111N. Low temperature geothermometry of surface and near-surface materials and processes. Heating and the geothermal resource as an environmental element.

622. Wetland Hydrology. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: GEOL 111N and MATH 163 or permission of the instructor. Hydrologic criteria used to delineate wetlands. Techniques used to calculate contributions of individual wetlands. Many classic laboratory exercises will require extensive field work in wetlands.

625. Coastal Plain Geology. Lecture 3 hours; 3 credits. Prerequisite: GEOL 325. Survey of the geology of the coastal plains of North America. The origin, geologic development, and economic importance of coastal plains of North America with emphasis on problems confronting

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urbanization of these areas.

360. Advanced Sedimentology. Lecture 3 hours; 3 credits. This course covers advanced topics in sedimentology, using sedimentological criteria will be discussed with emphasis on the interpretation of flow regime and depositional processes.

361. Basin Analysis. Lecture 3 hours; 3 credits. Prerequisite: GEOL 411/511, and 434/534 or permission of the instructor. The use of sedimentologic and geophysical data in the interpretation of the development and structure of basins. Emphasis is on a multidisciplinary approach to the study of basins.

362. Carbonate Petrology. Lecture 3 hours; 3 credits. Prerequisite: GEOL 431/531. The origin and diagenesis of carbonate rocks with emphasis on the changes that carbonate rocks undergo during various stages of diagenesis and burial. Work will be on thin sections and with electron microprobe analysis.

363. Petrology of Sandstones. Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisite: GEOL 431/531 or permission of the instructor. Petrology of sandstones: classification, sedimentary processes involved in the formation of sandstones under various conditions. Techniques of semiquantitative analysis of clay minerals and the alteration of their chemical and physical properties are emphasized.

365. Isotope Geochemistry. Lecture 3 hours; 3 credits. Prerequisite: CHEM 115N and GEOL 314 or permission of the instructor. Stable and radiogenic isotope geochemistry as a tool in studying different geochemical processes.

464. Surficial Processes. Lecture 3 hours; 3 credits. Prerequisite: GEOL 320, 344W or permission of instructor. Geomorphologic processes that form and reshape surficial deposits and soils. Field trips required.

465. Geomorphology. Lecture 3 hours; 3 credits. Prerequisite: MATH 211 and 212 or permission of instructor. The principles of vector analysis and potential theory as applied to gravity, magnetic, and electric methods of exploration; fundamental principles, instrumentation, field methods, data acquisition, reduction, and interpretation will be covered.

467. Geologic Aspects of Hazardous Waste Management. Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Characterization including classification, source and types of wastes and waste management. Major disposal methods (landfills, land disposal, underground storage tanks), waste characteristics (e.g., mobility, leachate potential) that affect geologic materials and ground water are discussed.


695/696. Selected Topics. 1-3 credits. Prerequisite: permission of the instructor.

697. Special Problems in Oceanography. Research. 1-3 credits. Prerequisite: permission of the instructor.

699. Thesis. 3 credits.

Oceanography — OCEN

106N-107N. Introductory Oceanography. Lecture 3 hours; laboratory 2 hours; 4 credits each semester. 106N is prerequisite to 107N. 106N emphasizes geology and chemistry covering the formation and constitution of the earth and life in the oceans. 107N emphasizes biology and ecology including meteorology, waves, tides, currents and life in the sea. Students will learn oceanographic techniques of field work and laboratory work. Oceanographic processes, environmental sampling, and data analysis and field trips.

400/500. Oceanographic Experiences in the Chesapeake Bay. Lecture 3 hours; 3 credits. Prerequisite: knowledge of mathematics and physics. This course offers students the opportunity to work in the field, with autonomous exploration of the Chesapeake Bay estuarine system. Field trips required. The instructor will guide the students as they learn how to plan, execute, and analyze a scientific project. Students will develop a research proposal and will present a written project report. They may participate in additional independent projects requiring additional study.

426/526. Concepts in Oceanography for Teachers. 1 credit. Prerequisite: Junior standing or permission of the instructor. The course will cover topics in the construction of basic oceanographic processes, chemical, geological, and physical oceanography for earth science teachers. Topics covered include plate tectonics, seismic waves, continental drift, weather and climate, oceanic processes, and their interactions. The course will culminate in a laboratory component that will supplement the course.

432/532. Oceanography of the Virginia Coast I. Lecture 3 hours; laboratory 4 hours; 3 credits. Prerequisite: OCEN 106N-107N or 126N-127N or 306. Prerequisites of shallow marine oceanography illustrated by the Chesapeake Bay and the Virginia coast. Field and laboratory experiences in oceanography including hands-on experience using equipment and methods suitable for marine and secondary education professionals. Course will provide understanding of oceanic processes using simple field and laboratory instruments.

433/533. Oceanography of the Virginia Coast II: Application to Environmental Management. Lecture 3 hours; laboratory 4 hours; 3 credits. Prerequisite: OCEN 106N-107N or 126N-127N or 306. Environmental issues illustrated by the Chesapeake Bay and the Virginia coast. Saturday field trips and cruises.

436/536. Barrier Islands and Coastal Lagoons. Lecture 1 hour; laboratory 3 hours; 3 credits. Prerequisite: OCEN 106N-107N, 126N-127N or 306. Barrier islands and coastal lagoons. Field trips to wave and tide dominated systems.

440/540. Biological Oceanography. Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisite: OCEN 106N-107N or 126N-127N or 306. Marine organisms and their relationship to physical and chemical processes in the ocean. Laboratory study of local marine organisms, marine ecosystem, and the use of experimental techniques. Includes identification, data analysis and field trips.

441/542. Ocean and Earth Sciences Field Study I and II. Lecture 4 hours; laboratory 4 hours; 4 credits. Prerequisite: OES major with senior standing. 441 is prerequisite for 442. Interdisciplinary investigation of selected sites in Southeastern United States. Field trips and cruises. Simple field and laboratory experiments. Sampling, data analysis, and group reports required. Focuses on site selection and evaluation, sampling, and sample analysis. Oral presentations of results will be made by each student.

448/548. Field Experiences in Oceanography. Lecture 2 hours; laboratory 4 hours; 4 credits. Prerequisite: core minor courses. Field experience in oceanography for the oceanography minor student. Learn about oceanographic processes, environmental sampling, and data analysis through lectures, extensive field sampling and laboratory analysis.

449/549. Principles of Aquaculture. Lecture 3 hours; 3 credits. Prerequisite: OCEN 440 or permission of the instructor. Application of ecological and environmental principles to traditional and new methodologies for large-scale production of aquatic and marine food organisms. Emphasis on tropical and temperate species and issues. Marine Fishery experiments.

450. Biological Oceanography Laboratory. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: BIOL 115N, 125N or CHEM 115N, 125N; PHYS 111N-112N, OCEN 106N-107N or 126N-127N or permission of the instructor. Laboratory study of local marine organisms, marine ecosystem, and the use of experimental techniques. Includes identification, data analysis and field trips.

451W. Data Collection and Analysis in Oceanography. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: OCEN 306, 310 and MATH 211-212. This course is designed to introduce the student to the basic physical oceanographic tools used to obtain and analyze data from oceanographic measurement. Students will use various theories. Geotechnical characteristics and plant habitats at elements of coastal landscapes. Field trips. 451W is prerequisite to 452. 451W and 452 offer 3 credits. Prerequisites: MATH 205-206 and PHYS 111N-112N or 231N-232N or permission of the instructor. Causes, natural and human disturbance to coastal and estuarine environments. Mathematical and graphical application to wave and tide problems.

457. Chemical Oceanography Laboratory. Laboratory 6 hours; lecture 3 hours. Prerequisite: OCEN 306, CHEM 321, 322. Analytical chemistry of seawater including determinations of nutrients, major and minor elements, seasonal and geographic variabilities.
oceanographic instruments to obtain data at different locations of the Chesapeake Bay. Data obtained with these instruments will be analyzed and with data analysis techniques discussed in class. The data will then be used to answer a particular question related to the temporal and spatial variability of the Chesapeake Bay physical and atmospheric processes. 452. Geophysical Fluid Dynamics. Lecture 3 hours; 3 credits. Prerequisites: OCEN 306, MATH 212 and PHYS 231N. Theoretical and experimental atmospheric and oceanic flows will be analyzed. The implications for certain force balances (geostrophic frictional layer, uniform or variable density, barotropic and baroclinic oceans) will be determined. 231N. The forces active in ocean and atmospheric dynamics will be processed and analyzed using the data obtained from oceanographic instruments to obtain data at different times and locations. 604. Introduction to Physical Oceanography. Lecture 3 hours; 3 credits. Introduction to descriptive and dynamical physical oceanography. Properties of sea water; distribution of temperature, salinity and density; water, salt, and heat budgets; techniques for describing the ocean; circulation and water masses of the world's oceans and coastal waters. 606. Experimental Procedures in Physical Oceanography. Lecture 3 hours; 3 credits. Provides basic knowledge for conducting field experiments in physical oceanography. Fundamental principles and sampling theory, Standard methods of data reduction, analysis, and report writing. 610. Advanced Chemical Oceanography. Lecture 3 hours; 3 credits. Prerequisites: CHEM 115N-116N or equivalent. Chemical properties of seawater; chemical composition of the oceans, including major and minor elements, dissolved gases, micronutrient elements, and organic compounds; processes controlling the composition of the ocean. 611. Chemical Oceanography Laboratory. Lecture 6 hours; 3 credits. Prerequisites: CHEM 15N-116N, 321, or equivalent, or consent of instructor. Basic analytical chemistry of seawater; field work in chemical oceanography. 612. Marine Geochemistry. Lecture 3 hours; 3 credits. Prerequisite: OCEN 610 or permission of the instructor. Processes governing the chemical composition of the ocean. River inputs and exchange; sediment-water exchange; hydrothermal input; internal cycling by physical processes; numerical modeling in chemical oceanography. 613. Geochemistry of Marine Sediments. Lecture 3 hours; 3 credits. Prerequisites: OCEN 610, 612, MATH 205-206. An introduction to the geochemistry of marine sediments, with an emphasis on nutrient (C,N,P,S) and trace element cycling in marine sediments. 614. Chemical Oceanography in the Coastal Environment. Lecture 3 hours; 3 credits. Prerequisite: OCEN 610 or permission of the instructor. Chemical dynamics of the coastal ocean; environmental impacts on marshes, and the continental shelf; river-sea, and sediment-water interactions; modeling techniques. 616. Advanced Lab in Oceanography. Lecture 1 hour; laboratory 6 hours; 3 credits. Prerequisite: OCEN 611. Analysis of trace constituents in marine waters, sediments and sediment porewaters; sampling techniques; field experience. 619. Biological Oceanography Laboratory. Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: permission of the instructor. The course includes exercises in the field (salt marsh; onboard the department's research vessel), in the laboratory (microbiology; photophysiology; zooplankton physiology), and on the computer (modeling manipulation of CD-ROM data sets). Each student conducts, executes, and presents a research project. 620. Introduction to Geologic Oceanography. Lecture 2.5 hours; laboratory 1 hour; 3 credits. Survey of marine geology, plate tectonics and basin formation; marine sediments and sediment dynamics; marine depositional environments and depositional systems; nodule stratigraphy and dynamics of the formation of marine basins. 625. Marine Sediments and Sedimentary Dynamics. Lecture 3 hours; 3 credits. Prerequisite: OCEN 620 or permission of instructor. Attributes of marine sediments; boundary layer fluid dynamics and sediment transport; characteristics of noncohesive grain/bed interaction and gravity transport; grain size frequency distributions, strata formation and biotic reworking of sediments. 628. Marine Sedimentary Geology. Lecture 3 hours; 3 credits. Prerequisite: OCEN 620 or permission of the instructor. Lithospheric dynamics and basin formation; sediment dating and marine biostratigraphy with applications in marine basins and the resulting sequence stratigraphy. 630. Dynamical Oceanography I. Lecture 3 hours; 3 credits. Prerequisites: OCEN 604 and MATH 661. Dynamics of rotating, stratified fluids, geostrophic adjustment, potential vorticity, Ekman layers, gravity waves, and large scale ocean circulation. 631. Marine Depositional Systems. Lecture 3 hours; 3 credits. Prerequisite: OCEN 620 or permission of instructor. Marine depositional environments, facies assemblages and their depositional processes, basin formation; numerical models of sediment accumulation. 639. Geological Oceanography Laboratory and Techniques. Laboratory 4 hours; 2 credits. Corequisite: OCEN 620. Laboratory and field instruments used in geological oceanography. 640. Advanced Biological Oceanography. Lecture 3 hours; 3 credits. Prerequisite: OCEN 610. Marine interactions with the physical and chemical environments of the sea; primary production, population ecology, nutrition, reproduction, and marine biogeography. 643. Primary Production in Marine Environments. Lecture 3 hours; 3 credits. Prerequisite: OCEN 440/540 or 640 equivalent. This course begins with a review of the basic principles of marine ecosystems. It further analyzes morphological responses to lagoonal morphodynamics and sedimentary dynamics within marine basins. Morphodynamics and sedimentary processes influencing patterns of shore elements. 704/804. Marine Phytoplankton. Lecture 3 hours; 3 credits. Prerequisites: OCEN 540 and 640 or equivalent. Emphasis is on current problems in phytoplankton ecology and physiology of marine phytoplankton. It further analyzes morphological responses to lagoonal morphodynamics and sedimentary processes influencing patterns of shore elements. 747/748/847. Reproduction and Larval Ecology of Marine Invertebrates. Lecture 3 hours; 3 credits. Prerequisite: OCEN 640. Topics include the evolution of reproductive strategies, the mechanisms of larval dispersal, and recruitment. 748/749/750/751. Marine Biogeochemistry. Prerequisites: OCEN 540 and 640 or equivalent. Course includes study of the ecology and physiology of marine phytoplankton. Emphasis is on current problems in marine biogeochemistry and population regulation and life cycles. Recent scientific papers will be studied. 749/749/750/780. Plankton Dynamics I (Zooplankton). Lecture 4 hours; 3 credits each semester. Prerequisites: OCEN 540 and 640 or equivalent. Environment of functional groups, population dynamics, and the role of functional groups in marine foodwebs and interaction of food web components with physical environments. 750/850. Microbial Ecology of Marine Benthic Environments. Lecture 3 hours; 3 credits. Prerequisites: OCEN 604, 630 and 730. Quasi-geostrophic beta-plane dynamics, wind driven circulation, thermocline circulation, effects of bathymetry, quasi-geostrophic waves, effects of mesoscale eddies, layered models with outcrops and ventilation. 755/860. Marine Phytoplankton. Lecture 3 hours; 3 credits. Prerequisites: OCEN 540 and 640. This course covers the photosynthesis, growth, and applications of mathematical model development for marine ecosystems. The course is designed to provide an understanding of how to use mathematical techniques and models to study the dynamics of marine food webs and interaction of food web components with physical environments.
Operations Management — See Information Systems and Technology/Decision Sciences

Ophthalmic Technology

These courses are coordinated through the School of Community and Environmental Health and are available only to those students admitted to the Ophthalmic Technology Program who have a certificate program jointly offered by Eastern Virginia Medical School and Old Dominion University.

L. J. Williams, Clinical Program Director

Ophthalmic Sciences - PHDS

311. Motility. Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisites: admission to the ophthalmic technology program. Fundamental study of muscle anatomy and physiology, vision testing for infants and children, and oculomotor function. 312. Ocular Anatomy and Systemic Disease. Lecture 3 hours; laboratory 1 hour; 3 credits. Prerequisite: admission in the ophthalmic technology program. In-depth level of study of the anatomy and physiology of the ocular system and medical terminology. 320. Optics and Refraction. Lecture 2 hours; laboratory 6 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Lensometry, visual function testing, refraction, refractometry, and basic optics. 321. Visual Pathway. Lecture 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. Neuroanatomy and physiology of the visual system. 322. Pharmacology and Systemic Disease. Lecture 3 hours; laboratory 3 hours; 3 credits. Prerequisite: a science course in the ophthalmic technology program. General technical skills, systemic disease, case histories, basic pharmacology. 323. Clinical Skills. Lecture 5 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Advanced refraction and refractometry, basic contact lens fitting, photography, and introduction to fluorescein angiography. 327. Advanced Motility. Clinical experience 8 hours; 4 credits. Prerequisite: admission in the ophthalmic technology program. Advanced motility with sensory evaluation. (qualifies as a CAP experience) 330. Advanced Technologic Skills. Clinical experience 20 hours; 10 credits. Prerequisite: admission in the ophthalmic technology program. Continued utilization of advanced, theoretical, and practical skills in the ophthalmic technology program. 420. Specialty Rotation I (2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, cornea and contact ophthalmic surgical assisting, and advanced diagnostic testing and various orthoptic treatments. 422. Specialty Rotation III (2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, cornea and contact ophthalmic surgical assisting, and advanced diagnostic testing and various orthoptic treatments. 423. Specialty Rotation IV (2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, cornea and contact ophthalmic surgical assisting, and advanced diagnostic testing and various orthoptic treatments. 430. Advanced Topics I. Seminar 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. A survey of various advanced topics in ophthalmic disease and special testing. 440. Advanced Topics II. Seminar 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. A survey of various advanced topics in ophthalmic disease and special testing.

Philosophy and Religious Studies


Philosophy — PHIL

110P. Introduction to Philosophy. Lecture 3 hours; 3 credits. An introduction to basic concepts, methods, and issues in philosophy, and a consideration of representative types of philosophical thought concerning human nature, the world, knowledge, and value. 111C. Critical Thinking and Writing. Lecture 3 hours; 3 credits. Prerequisite: PHIL 110P. A writing course based on the development of critical thinking skills. The various facets of rational argumentation and critique will be developed through the writing of essays and written responses. Research skills will be developed through the writing of a thesis paper. 116P. Philosophy and Art. Lecture 3 hours; 3 credits. A study of the principles of correct reasoning and the types of fallacious reasoning. Includes an examination of the philosophical and historical context of logic, and the application of logical methods to philosophical questions. 126P. Honors: Introduction to Philosophy. Lecture 3 hours; 3 credits. Open only to students in the Honors College. A special honors section of PHIL 110P. 127P. Honors: Science — Knowledge, Reality and Values. Lecture 3 hours; 3 credits. Open only to students in the Honors College. Scientific developments are used as an occasion for philosophical reflection. In the process the student is led to a better understanding of science. The course introduces and makes use of basic logical and conceptual tools of philosophy. 150P. Introductory Philosophical Introduction. Lecture 3 hours; 3 credits. A comparative and philosophical study of major world religions in the Eastern and Western traditions, with an emphasis on cultural and historical contexts, and basic philosophical issues pertaining to religion: the foundations of religious knowledge and belief, the meaning of human life, the basis of right action, the nature of good and evil, divinity, death and immortality. 227P. Honors: World Religions — A Philosophical Introduction. Lecture 3 hours; 3 credits. Open only to students in the Honors College. A special honors section of PHIL 150P. 311P. Philosophy and Public Affairs. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. A study of where contemporary moral issues arise, discrimination, poverty, sex, and the rights of scientists and criminals, and personal rights. 320. Gender and Ethics. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. An examination of ethical issues concerning whether men and women should be treated differently and of the standards by which such decisions are made. 323 Business Ethics. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. An intensive examination of ethical issues which arise in conducting business; an exploration of the principles underlying ethical decisions. 324. Marx and the Marxists. Lecture 3 hours; 3 credits. Prerequisite: junior standing and at least six semester hours in philosophy, or permission of the instructor. Learning how to understand Marxism, yesterday and today, through readings, applications, and exercises for all coursework. 305. American Philosophy. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An examination of the writings of some of the major American philosophers such as Peirce, James, Royce, Dewey, and Whitehead. 312. Philosophy of Religion. Lecture 3 hours; 3 credits. Prerequisite: junior standing and three semester hours in philosophy, or permission of the instructor. An analytical and historical study of the philosophy of religion. Such topics as the existence of God, the problem of evil, theism and atheism, prayer, and immortality are discussed. 314. Studies in Western Religious Thought. Lecture 3 hours; 3 credits. Prerequisite: three semester hours in philosophy, or permission of the instructor. A study of various techniques of exploring religious, philosophical, and cultural themes in the traditions of Judaism, Christianity, or Islam. 324. Philosophy of Art. Lecture 3 hours; 3 credits. Prerequisite: junior standing and three semester hours in philosophy or permission of the instructor. A study of the various theories of art and human creativity in the context of historical and cultural backgrounds. 330W. Ancient Philosophy. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. A study of the thought of the classical Greek and Roman philosophers from the sixth century B.C. to the fifth century A.D. 331. Modern Philosophy. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An intensive study of the thought of the major philosophers through the eighteenth century, including the empirical tradition of Bacon, Locke, Berkeley, and Hume, the rationalistic tradition of Spinoza and Leibniz, and the critical philosophy of Kant. 340. Logic I. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. The study of formal logic and the nature of a deductive system. Consideration will be given to Truth Functions, the Nineteen Rules of Inference, and Quantification for Monadic and Multiple Variables. Inductive inference will also be briefly considered. 344T. Environmental Ethics. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An examination of the thought of the philosophical tradition “personhood” in Eastern and Western traditions. The course will include a methodology for comparing ethical issues and an analysis of the ethical issues created, aggravated or transformed by the environment with special attention to the foundations of ethical decision making. 345. Bioethics. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. An examination of the philosophical foundations of ethical decision making in biology, medicine, and the life sciences. 353. Asian Religions. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. A study of religious and philosophical traditions of India, China and Japan. Primary emphasis will be given to Hinduism, Buddhism, Confucianism and Taoism. 354. Comparative Philosophy East and West - Personhood. Lecture 3 hours; 3 credits. Prerequisite: PHIL 110P or 150P or permission of the instructor. An examination of the philosophical theme “personhood” in Eastern and Western traditions. The course will include a methodology for comparative analysis, a dialogue on key issues and their application to contemporary topics from historical and contemporary religious, psychological and gender perspectives. The class will examine the nature of a person in the Eastern and Western traditions as well as social and political contexts for the various conceptions. 355. Ethics of Language. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An examination of ethical issues created, aggravated or transformed by the use of language, such as in computer technology. Theory-grounded paradigms of ethical decision making will be presented with application to language issues. Also, the topics of cybercrime, privacy, cyberspace, and business applications. 369. Practicum. 1-3 credits. Prerequisites: junior standing and three semester hours in philosophy. The course offers three forms of practical experience for philosophy majors: Professional (for students anticipating careers in academic/professional philosophy); Classroom (for students anticipating graduate study and a teaching career); Civic/Social Affairs (for students interested in grassroots activism). Consult the department
422/542. Studies in Applied Ethics. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An intensive study of ethical issues in a particular field or profession; an emphasis on ethical theory underlying professional practice.

480/580. Hinduism. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. An introductory study of the basic teachings of Hinduism as manifested in its sacred writings.

481/581. Buddhism. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. A study of the origin, development, and contemporary status of Buddhism, in terms of its religious and philosophical elements and its influence in Asian cultures.

485/585. Japanese Religion and Philosophy. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. A study of the religious and philosophical traditions of Japan. Emphasis will be given to Shintoism, Buddhism, and Neo-Confucianism as well as their contemporary status and influence in Japanese culture.

491/591, 492/592, 493/593, 494/594. Seminar in Philosophy. 3 credits each semester. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor. A study of a limited number of topics in philosophy. The course will feature student presentations and guest speakers.

495/595, 496/596. Topics in Philosophy. 1-3 credits each semester. Prerequisite: appropriate survey course or permission of the instructor. The advanced study of a selected topic designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be regularly offered. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

497/597, 498/598. Tutorial Work in Special Topics in Philosophy. 1-3 credits each semester. Prerequisites: senior standing or permission of the instructor. Independent reading and study of a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

603. Studies in Social and Political Philosophy. Lecture 3 hours; 3 credits. An intensive study of one or more figures, movements, or theoretical questions in social and political philosophy.

606. Studies in Asian Philosophy. Lecture 3 hours; 3 credits. An intensive study of one concept, movement, or thinker indigenous to the Asian philosophical tradition.

608. Studies in Ancient Philosophy. Lecture 3 hours; 3 credits. A study of certain philosophers, movements or specific philosophical issues in the ancient Greek and early Roman periods.

609. Studies in the Philosophy of Science. Lecture 3 hours; 3 credits. An exploration of some philosophical problem or problem area related to science or some position or tradition in the philosophy of science.

666. Studies in the History of Philosophy. Lecture 3 hours; 3 credits. An evaluation of the field of art in relation to the rest of human culture, emphasizing the various approaches that may be used.

611. Studies in the History of Philosophy. Lecture 3 hours; 3 credits. A consideration of selected themes in the history of philosophy, or the specific examination of one major philosopher or group of related philosophers.

677, 698. Tutorial Work in Special Topics in Philosophy. 1-3 credits each semester. Prerequisites: permission of the department chair. Independent reading and study of a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

707/807. Ethics in Public Health Practice. 1-3 credits. Prerequisite: open to all graduate students in relevant fields. An investigation of ethical issues in public health policy, practice, and research. Students will develop a capacity for reasoned judgments in these matters by understanding and applying basic moral concepts, theories, and ideals.

710/810. International Rights. Lecture 3 hours; 3 credits. Prerequisite: approval of instructor. A philosophical study of rights applicable to the international arena. Theories from both the Modern European period to the present day will be treated. Coverage includes international law, the rights of nations, and human rights.

797/897. Tutorial in Philosophy. 1-3 credits each semester. Prerequisite: approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

Physical Education-See Exercise Science.

Physical Therapy — P T

Assocate Professor G. C. Mahaler (Chair of the Physical Therapy and Graduate Program Director of the Physical Therapy Program), Professors J. L. Echternach, Sr. and R. J. Swanson*, Associate Professors K. A. Carson*, G. L. W. Macfarlane, Assistant Professors B. Y. Hargrave*, and M. L. Walker. Assistant Professor J. M. T. Tumbarelo. Senior Lecturers E. F. Giles, B. Ernst Jamali and M. Mariano.

600. Neurophysiology Seminar. Lecture 1 hour; 1 credit. These instructional sessions are intended to help the student apply the material covered in the neurophysiology laboratory seminar in the academic year to the student for the second year courses which require the application of neurological and neurophilosophical principles to develop core plans for patients with functional movement disorders.

621. Introduction to Physical Therapy. Lecture 2 hours; 3 credits. A study of basic medical terminology, patient management skills involving draping, positioning, transfers, and gait training with assistive devices.

627. Theory and Practice I. Lecture 3 hours; laboratory 3 hours; 4 credits. Several instructional units introduce the student to the basic areas of physical therapy. Units include orientation to the profession, basic safety procedures, physical modalities of heat and cold, electrotherapy, bandaging and sterile technique, and massage.

628. Theory and Practice II. Lecture 3 hours; laboratory 3 hours; 4 credits. Instructional units in this course include introduction of therapeutic exercise approaches for patient types with differing diagnoses. Through critical thinking and problem solving, students learn how to design specific exercise approaches based upon the goals developed for various diagnostic groups. They also learn how to assess the effectiveness, success, and potential risks associated with exercise and develop strategies to modify the treatments based upon those factors.

630. Concepts in History for Physical Therapy. Lecture 3 hours; 1 credit. An introduction to the historians in this course in history is on connective tissue, muscle tissue, tissues of the nervous system as well as the skeletal system. The course designed for physical therapy student a basic understanding of cell structure and function in these major systems. The course integrates with human anatomy and human neuroscience.

631. Old Testament. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An investigation of the Old Testament. The course aims to provide students with an understanding of Biblical criticism and research. Attention is given to the cultural and historical background of these writings.

632. New Testament. Lecture 3 hours; 3 credits. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor. An investigation of the New Testament. The course provides students with an understanding of Biblical criticism and research. Attention is given to the religious and cultural background of early Christianity, particularly in light of the first century A.D.

650. Islam. Lecture 3 hours; 3 credits. Prerequisites: three semester hours in philosophy or permission of the instructor. A study of the Islamic tradition, including its primary texts, historical development, intellectual tenets, and contributions to human culture. Specific attention will be given to Islam as a way of life.

651. Christianity. Lecture 3 hours; 3 credits. Prerequisites: three semester hours in philosophy or permission of the instructor. A study of the Christian tradition, including its primary texts, historical development, intellectual tenets, and contributions to human culture. Specific attention will be given to Islam as a way of life.

660. Neurophysiology Seminar. Lecture 1 hour; 1 credit. These instructional sessions are intended to help the student apply the material covered in the neurophysiology laboratory seminar in the academic year to the student for the second year courses which require the application of neurological and neurophilosophical principles to develop core plans for patients with functional movement disorders.

DUAL APPOINTMENT
medical and pathological conditions associated with musculoskeletal and cardiopulmonary disease and disorders. The course will focus on preventative health care, restorative treatments, patient education, and the importance of maintaining a healthy lifestyle. It will also cover the psychological aspects of physical therapy, including stress management, coping strategies, and the impact of disease and illness on quality of life.

840. Patient Evaluation III. Lecture 2 hours; laboratory 2 hours; 2 credits. A continuation of Patient Evaluation II. This course will focus on advanced techniques in patient evaluation, including functional assessment, reliability and validity of tests and measures, and the development of individualized treatment plans.

845. Clinical Problem Solving IV. Lecture .5 hour; field experience 1 hour; 1 credit. This course will provide students with an opportunity to apply academic knowledge, theory, and practice during a period of clinical education. The student will be required to collect data for a research case study during this internship or PT 672.

870. Clinical Internship III. Field experience 40 hours/week; 6 weeks; 4 credits. This course will provide students with an opportunity to apply academic knowledge, theory, and practice during a period of clinical education. The student will be required to collect data for a research case study during this internship.

871. Clinical Internship IV. Field experience 40 hours/week; 8 weeks; 4 credits. This course will provide students with an opportunity to apply academic knowledge, theory, and practice during a period of clinical education. The student will be required to collect data for a research case study during this internship or PT 672.

872. Clinical Internship V. Field experience 40 hours/week; 8 weeks; 4 credits. This course will provide students with an opportunity to apply academic knowledge, theory, and practice during a period of clinical education. The student will be required to collect data for a research case study during this internship or PT 672.

880. Psychosocial Aspects of Patient Care. Lecture 2 hours; 2 credits. This course will focus on the emotional and psychological factors that influence patient care. It will cover topics such as the role of the patient in the healing process, the influence of family and social support, and the impact of personal and cultural factors on health care decisions.

881. Patient Management Issues in Aging. Lecture 2 hours; 2 credits. This course will focus on the management of patients with age-related conditions, such as arthritis, diabetes, and osteoporosis. It will cover topics such as the diagnosis, treatment, and prevention of age-related conditions.

882. Practice Management. Lecture 3 hours; 3 credits. This course will cover the management of clinical settings, such as clinics and hospitals. It will cover topics such as the development of clinical policies, the management of clinical resources, and the evaluation of clinical outcomes.

896. Topics in Physical Therapy. Lecture 1 hour; 1 credit. Specially designed courses concerning clinically relevant aspects of the course content. Approval of the Department Chair is required. The course will cover advanced topics in physical therapy, such as rehabilitation of the elderly, management of chronic pain, and the use of advanced technologies in physical therapy.

897. Topics in Special Exams. Lecture 2 hours; 2 credits. This course will cover advanced topics in physical therapy, such as the use of advanced technologies in physical therapy, the diagnosis and treatment of chronic conditions, and the role of physical therapy in the management of complex conditions.
231N-232N cannot simultaneously or subsequently receive permission of instructor. 231N is prerequisite to 232N. A modern physics laboratories. Topics to be covered include: basic electronics, vacuum technology, optics and lasers, nuclear instruments, future programs, computer interfacing, and glasblowing. (offered fall-spring sequence)

309. Physics on the Back of an Envelope. Lecture 1 hour; 1 credit. Corequisite: PHYS 102N, 112N or 232N. Physicists should be able to estimate the order-of-magnitude of anything. How many atoms of Julius Caesar do you eat every day? How much does waste a nuclear power plant generate? Will develop concepts, relations and numbers useful for estimation. Will cover little new material, emphasizing already acquired knowledge. Will help students apply physics to real-life questions and understand which physical effects are appropriate on which scales. Seminar course. (offered spring)

311. Color in Nature and Art. Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N. Corequisite: MATH 212. Light as an electromagnetic wave. Lens, mirror and fiber optical systems, polarization, interference and diffraction. Interaction of light with biological and inorganic materials. (offered fall)

312. Elements of Optics. Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N, Corequisite: MATH 212. Light as an electromagnetic wave. Lens, mirror and fiber optical systems, polarization, interference and diffraction. Interaction of light with biological and inorganic materials. (offered fall, odd numbered years)

319. Analytical Mechanics. Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N, Corequisite: MATH 307. Fundamentals of Newtonian mechanics. Topics include kinematics, dynamics, central forces and planetary motion, and resonance phenomena. (offered fall)

320. Introduction to Electromagnetic Theory. Lecture 3 hours; 3 credits. Corequisite: MATH 312. Prerequisite: PHYS 232N. A one-semester course covering the important topics of modern electromagnetism. (offered fall)

323. Modern Physics. Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N. Corequisite: MATH 307. An introduction to the structure of the atomic nucleus, natural and artificial radioactivity, nuclear decay processes and stability of nuclei, nuclear reactions, properties of nuclear forces, and nuclear models. Also, particle phenomenology, experimental techniques and the standard model. Topics include the spectra of leptons, mesons, and baryons; and electromagnetic interactions. (offered spring, even numbered years)

416/516. Introduction to Solid State Physics. Lecture 3 hours; 3 credits. Prerequisite: PHYS 320 and MATH 307. Introduction to solid state physics and materials science, with emphasis placed on the applications of each topic to the experimental and analytical techniques. Topics include crystallography, thermal and vibrational properties of crystals, electrical conduction, band theory of solids, superconductivity and the magnetic properties of materials. (offered fall, even numbered years)

420/520. Introductory Computational Physics. Lecture 3 hours; 1-3 credits. Prerequisites: PHYS 232N and MATH 212. Introduction of computational methods and visualization techniques for problem solving in physics.

455/551. Theoretical Mechanics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 319 and 323. Introduction to the physical and mathematical structure of quantum theory, with emphasis on theoretical and experimental origins of the subject. The curriculum includes techniques for solving the Schrödinger wave equation, particularly for the harmonic oscillator and the hydrogen atom. (offered spring)

457, Cooperative Education, 1-3 credits each semester (may be repeated for credit). Prerequisite: approval of the department and Career Management in accordance with the policies of the department and the Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows student to gain short duration career-related experience. A one-semester course in which analog circuits in the design of instrumentation systems are covered in 404/504. The course exposes proper use of the oscilloscope, function generator, DMM, and X-Y recorder in tabulated and measurement procedures. (offered fall-spring sequence)

405/505+, The Planetarium. Lecture 3 hours; 3 credits. Prerequisites: junior standing and an introductory course in astronomy. Introduction to the planetarium as an educational tool in the teaching of astronomy. Prerequisites: successful completion of the instructor: 403 is prerequisite to 404. A laboratory-oriented course in which analog circuits in the design of instrumentation systems are covered in 404/504. The course exposes proper use of the oscilloscope, function generator, DMM, and X-Y recorder in tabulated and measurement procedures. (offered fall-spring sequence)

454/554. Thermal and Statistical Physics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 601 or ECE 320 and MATH 307. PHYS 323 A study of the fundamental concepts of thermodynamics, kinetic theory, and statistical mechanics. Topics include the thermodynamic principles and systems, kinetic theory of gases, statistical mechanics of gases and an introduction to quantum statistics. (offered spring)

458, 488, Honors Program in Physics. 1-3 credits each semester. Prerequisites: senior standing and formal admission to the Honors Program.

463, 643, Concepts and Research in Physics. 1-3 credits each semester. Prerequisite: senior standing. These courses afford the student an opportunity to pursue individual study and advanced research.
in research activities involving skills in basic shop procedures, vacuum and glass technology, and digital in research activities such as a study of various transducers procedures, vacuum and glass technology and digital

Lectures on contemporary problems in applied physics. 

Techniques for differential and integral problems. Algebraic interactions in solids. Superconductivity, magnetism and complex atomic and molecular spectra.

Lectures on the nature and properties of solid surfaces, liquid and gas interactions with surfaces, physical absorption and chemical absorption.

Theoretical description of the physical properties of solids, with emphasis on mechanical, thermal, electrical and magnetic properties.

Advanced Topics Courses. Lecture 3 hours; 3 credits. Prerequisite: PHYS 722/822. These courses provide students with knowledge of methods and background necessary for pursuit of research. Subject matter is variable.

Superconductivity; Bloch functions, Brillouin zones, electron dynamics; temperatures for fermion and boson systems. Selected applications in nuclear and condensed matter physics.

Advanced Quantum Mechanics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 603, 704, 721. Introduction to relativistic quantum mechanics, symmetry in relativistic wave equations; solutions to relativistic wave equations for bound states and scattering processes; classical field theory and role of symmetries in construction of conserved currents; introduction to second quantization of fields.

Advanced Topics Courses. Lecture 3 hours; 3 credits. Prerequisite: PHYS 722/822. These courses provide students with knowledge of methods and background necessary for pursuit of research. Subject matter is variable.


900. Hadron Physics with Chromodynamics. Lecture 3 hours; 3 credits. Prerequisite: at least introductory courses in solid state, statistical and quantum mechanics. This course describes the constituent quark model picture of hadron structures. It begins with a general introduction to QCD, approaching the confinement regime via a Hamiltonian lattice formulation of the theory. The course will close with some implications of the constituent quark model for the NN interaction.

890. Hydrodynmics with Chromodynamics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 603, 704, 721. Introduction to relativistic quantum mechanics, symmetry in relativistic wave equations; solutions to relativistic wave equations for bound states and scattering processes; classical field theory and role of symmetries in construction of conserved currents; introduction to second quantization of fields.

889. Doctoral Research. Credit varies, 1-12 credits each semester.

Political Science — POLS

Professors G. Sussman (Chair of the Department of Political Science and Geography), J. Chen, D. R. Hager (Vice Provost), S. Serfaty and S. Yelit. Associate Professors F. Adams, M.L. Clemens, R. Karp, and K. Taylor Gabaubl (Director of Graduate Programs in International Studies). Assistant Professor J. G. Behr. Senior Lecturer E. Eisnith (University Pre-Law Advisor), Lecturer Maria-Laura Formella-Dühring.

100S. Introduction to International Politics. Lecture and discussion 3 hours; 3 credits. This course provides a basic introduction to international politics. It considers some of the more prominent theoretical perspectives in the discipline and examines the major political systems of the contemporary world. The course concludes with a discussion of the international political system. Special Honors College. Special honors section of POLS 100S. Comparative study of the various theories of international politics. The course examines American political culture, gender and minority rights, citizen participation, national institutions, public policy, and foreign and defense policy.

102. Introduction to Comparative Government and Politics. Lecture 3 hours; 3 credits. This course introduces the primary mechanisms of the global political economy in allocating goods, income, wealth and the means to produce them, with emphasis on the international division of labor.

126S. Honors: Introduction to American Politics. Lecture 3 hours; 3 credits. Open only to students in the Honors College. Special honors section of POLS 101S. 127S. Honors: Introduction to International Politics. Lecture 3 hours; 3 credits. Open only to students in the Honors College. Special honors section of POLS 100S.

121W. Model United Nations I. Lecture 3 hours; 3 credits. Prerequisites: POLS 100S or GEDG 100S or permission of the instructor. The course introduces students to the primary mechanisms of the global political economy in allocating goods, income, wealth and the means to produce them, with emphasis on the international division of labor.

124. International Relations Theory. Lecture 3 hours; 3 credits. Prerequisites: POLS 100S or GEDG 100S. Comparative study of the various theories that attempt to explain the patterns of interactions among the diverse political entities in the international system. Draws on historical and modern cases to explain traditional and alternative theories.

125W. Political Ethics. Lecture 3 hours; 3 credits. Prerequisites: six hours of social science and junior standing. This course is designed for advanced students who are interested in the history of political philosophy. The course provides a brief overview of the major theoretical schools and uses them to examine contemporary international and global issues, such as regional/global

979. Research. 1-6 credits each semester.

825. Solid State Physics II. Lecture 3 hours; 3 credits. Prerequisite: PHYS 724/824. Phonons, plasmons, magnons, and polarons; introduction to many body techniques; superconductivity; Bloch functions, Brillouin zones, electron dynamics; temperatures for fermion and boson systems. Selected applications in nuclear and condensed matter physics.

841. Many-Body Physics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 621, 704/804, 707/807. Review of second quantization, the mean field method of perturbation theory at zero and finite temperatures for simple quantum system. Selection of applications in nuclear and condensed matter physics.

842. Advanced Quantum Mechanics. Lecture 3 hours; 3 credits. Prerequisites: PHYS 603, 704, 721. Introduction to relativistic quantum mechanics, symmetry in relativistic wave equations; solutions to relativistic wave equations for bound states and scattering processes; classical field theory and role of symmetries in construction of conserved currents; introduction to second quantization of fields.

890. Hydrodynmics with Chromodynamics. Lecture 3 hours; 3 credits. Prerequisite: at least introductory courses in solid state, statistical and quantum mechanics. This course describes the constituent quark model picture of hadron structures. It begins with a general introduction to QCD, approaching the confinement regime via a Hamiltonian lattice formulation of the theory. The course will close with some implications of the constituent quark model for the NN interaction.

899. Doctoral Research. Credit varies, 1-9 credits each semester.
conflict and cooperation, arms control, the protection of human rights, international trade, regional/global economic development, international law, international organization, world politics, human rights, and environmental policy.

326. American Foreign Policy. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S or permission of the instructor. This course examines the international relations of the United States in the context of the global political economy, focusing on the impact of the war on terrorism, the strategies of the Civil Rights Movement, and Black protest politics will analyze the underpinnings, leadership, and political strategies of the Civil Rights Movement. This course examines the evolution of American foreign policy in the context of global political economy, focusing on the impact of the war on terrorism, the strategies of the Civil Rights Movement, and Black protest politics will analyze the underpinnings, leadership, and political strategies of the Civil Rights Movement.

327. Politics of National Security. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S or permission of the instructor. This course examines the evolution of American foreign policy in the context of global political economy, focusing on the impact of the war on terrorism, the strategies of the Civil Rights Movement, and Black protest politics will analyze the underpinnings, leadership, and political strategies of the Civil Rights Movement.

328. Russian Politics. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S or 102 or GEOG 100 or permission of the instructor. This course examines the evolution of Russian politics, theCold War, and the collapse of the Soviet Union. It explores Russia's efforts to establish democracy and the role of law, to fashion a productive, beneficial, and stable relationship with the West, and to craft advantageous foreign and military policies toward the West, Asia, and the Middle East.

331. State and Local Government. Lecture and discussion 3 hours; 3 credits. Prerequisite: POLS 101S. This course is a survey of state and local government institutions, functions, processes, and behavior of political actors.

332. Western Europe in World Affairs. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S. This course analyzes trends and challenges facing Western Europe's international politics from World War II to the present. Emphasis is on the role of the European Union, NATO, and the United States in influencing the region. Students are expected to understand the interdependence of the European Union and the United States, and to consider the implications for U.S. foreign policy.

333. Media and Politics. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S. This course examines the role of the media in shaping public opinion and political behavior. It analyzes the impact of media on political campaigns, the role of the media in political decision-making, and the relationship between public opinion and political behavior.

334. Electoral Politics. Lecture 3 hours; 3 credits. Prerequisite: 6 hours in political science including POLS 101S. An examination of the political process, including the role of the media in shaping public opinion and political behavior. It analyzes the impact of media on political campaigns, the role of the media in political decision-making, and the relationship between public opinion and political behavior.

335. Environmental Politics. Lecture 3 hours; 3 credits. Prerequisite: POLS 101S. This course examines the role of environmentalism in the United States and the world, including the policy-making process, science and the role played by the public and political institutions.

336. The Asian Challenge. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S or 102. This is a comparative study of the major political, economic, and social developments in the major countries of South Asia. Themes will include democratization, problems of economic development, the role of the state and religion, and the structure of the political system. This course will also address the evolving political system in the region, focusing on the role of the media in shaping public opinion and political behavior. It analyzes the impact of media on political campaigns, the role of the media in political decision-making, and the relationship between public opinion and political behavior.

338. Politics of East Asia. Lecture 3 hours; 3 credits. Prerequisite: six hours of social science and junior standing or permission of the instructor. This intensive course examines political cultures/traditions, governmental institutions, decision-making processes, public policies, political organization, and current social issues. A major focus will be East Asia, including China, Japan, and Korea. In addition, it includes the role of the media in shaping public opinion and political behavior. It analyzes the impact of media on political campaigns, the role of the media in political decision-making, and the relationship between public opinion and political behavior.

339. Technology and War. Lecture 3 hours; 3 credits. Prerequisite: POLS 100S or permission of the instructor. This course examines the impact of technological advancements on warfare and the relationship between technological change and political behavior. It analyzes the impact of media on political campaigns, the role of the media in political decision-making, and the relationship between public opinion and political behavior.

340. American Constitutional Law. Lecture 3 hours; 3 credits. Prerequisite: 6 hours in social science and junior standing or permission of the instructor. This course focuses on the American Constitution and the rights of Black people in the United States. It examines the relationship between the Constitution and the political system in the United States. It also analyzes the role of Black political thought, the Civil Rights Movement, and Black protest politics will also be analyzed.

341. The Civil Rights Movement. Lecture 3 hours; 3 credits. Prerequisite: six hours in social science and junior standing or permission of the instructor. This course examines the American Civil Rights movement and its impact on the political system in the United States. It analyzes the role of Black political thought, the Civil Rights Movement, and Black protest politics will also be analyzed.

342. Conflict and Cooperation. Lecture 3 hours; 3 credits. Prerequisite: POLS 101S or permission of the instructor. This course examines decision-making in global politics and the role of power in foreign policy, and the impact of public policy on the lives of American women and to see how women influence and participate in national politics.
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695, 696. Selected Topics in Political Science. 3 credits. Each. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

311. Psychology and the Law. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

312. Psychology of Development. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

313. Psychology of Aging. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

314. Principles of Learning. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

315. Quantitative Methods. Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisite: PSYC 203S. The application of statistical principles to psychological research problems, including an introduction to the principles of experimental design.

318W. Experimental Psychology. Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisite: PSYC 317. An examination of the principles of psychological research. Experimental design and interpretation are stressed. The student will be taught to locate relevant research and to report his or her own research in the style of the American Psychological Association.

319. Psychology of the Exceptional Child. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S or 203S. A study of the psychological development of the child with physical, emotional, or intellectual impairments or disabilities.

332. Psychology of Women. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

334. Social Development. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

335. Social Psychology. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

336. Personality Psychology. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

337. Language and Thought. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

338. Psychology of Family. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

339. Psychology of Group Processes. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

340. Psychology of Health. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

341. Psychology of Motivation. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

342. Psychology of Emotion. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

343. Psychology of Perception. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

344. Psychology of Cognition. Lecture 3 hours; 3 credits. Prerequisites: PSYC 203S, 204S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

345. Organizational Psychology. Lecture 3 hours; 3 credits. Prerequisite: PSYC 303S. This course emphasizes the study of the psychological principles and methods of motivated behavior. Topics discussed include the principles of motivation, social psychology, and the psychology of work environment.

346. Psychology of Sport and Exercise. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

347. Psychology of Aging. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.

348. Psychology of Development. Lecture 3 hours; 3 credits. Prerequisite: PSYC 203S. An examination of the principles of psychological research and the law. Students will use psychological principles and methods to examine topics such as eyewitness testimony, false confessions, and the treatment of the mentally ill.
A study of critical issues in human sexuality; gender and sexual identity, sexual arousal and erotic behavior, relationship development, and sexual dysfunction and deviation disorders.

367. Cooperative Education. 3 credits. (May be repeated for credit with departmental approval and Career Management in accordance with the policy for granting credit for Cooperative Education Programs. Available only to students majoring in Psychology.) Prerequisite: admission to the cooperative education program. Students register for 3 credits per term. A maximum of 6 credits of PSYC 368 and/or 369 can be counted toward the major in Psychology. (Qualifies as a CAP experience)

369. Practicum in Clinical Psychology. 3 credits. For ODU psychology majors only. Prerequisites: PSYC 317, PSYC 318W (pre- or corequisite) and permission of the instructor. Corequisite: PSYC 371. Students engage in academically relevant work activities in clinical settings. Available for pass/fail grading only. Students should work with the Career Management Center to identify placement in the semester prior to enrollment. Instructor approval is required. A maximum of 6 credits of PSYC 368 and/or 369 can be counted towards the major in Psychology. (Qualifies as a CAP experience)

371. Career Supervision Seminar. Discussion 1 hour; 1 credit. Prerequisite: PSYC 369. Students doing practica at designated clinical placements must also enroll in this course. This seminar addresses the special issues in the areas of safety, confidentiality, and professionalism that arise in clinical settings. Social issues and ethical considerations also enroll in the course. A maximum of 2 credits of PSYC 371 can be counted towards the major in psychology.

395, 396. Capstone. 1-3 credits. Prerequisite: permission of the instructor. The department offers selected topics that may not be offered on a regular basis.

400. Seminar. Discussion 1 hour; 1 credit. Prerequisite: senior standing and minimum GPA of 3.25. Discussion of current research, theoretical, and professional topics in psychology.

403. History of Psychology. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S. A survey of the historical development of modern psychology. The major systems and their influences on contemporary American psychology are studied.

405/405S. Abnormal Psychology. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S. A study of psychopathology, covering various behavior disorders, their descriptions, characteristics, and causation. Methods of therapeutic technique are reviewed.

408/508. Theories of Personality. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S. A study of the structure of personality and the dimensions along which individuals differ. The contributions of major personality theorists and the implications of research are considered.

412/512. Psychological Tests. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S. An examination of the history, theory and applications of psychological testing.

417. Advanced Statistics and Computer Applications. Lecture 3 hours; 3 credits. Prerequisites: PSYC 317 and 318W, or permission of the instructor. The course covers advanced statistical methods and computer applications that build on knowledge and skills acquired in PSYC 317 and 318W.

420/520. Cross-Cultural Psychology. Lecture 3 hours; 3 credits. Prerequisite: Junior standing or permission of instructor. A wide variety of psychological research and theoretical literature relevant to comparing the world of the individual, as examined and the impact of culture on human behavior is discussed. The course examines cross-cultural research conducted by psychologists. Attention is paid to the role cultural factors play in changing and cultural development, and cultural change, are each considered when targeting research topics.

431/531. Community Psychology. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S or permission of the instructor. This course focuses on behavioral prevention and intervention programs at the local and community levels to address social problems. The goal is to understand how to design and evaluate such programs. Topics vary, but include an emphasis on public service, a focus on the community as a unit, and an exploration of how public policies, social policies, and social change, and cultural development, are each considered when targeting research topics.

460/560. Psychology of African Americans. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S or permission of the instructor. This course examines the issues and perspectives related to the psychological evolution of African Americans in the United States. Particular emphasis is placed on exploring the discipline of psychology from an Afrocentric view.

461/561. Drug Abuse and Dependence. Lecture 3 hours; 3 credits. Prerequisite: PSYC 201S. This course offers a comprehensive analysis of assessment issues and problems associated with addictive behavior with an emphasis on alcohol abuse and dependence.

487, 488. Honors Program in Psychology. For ODU psychology majors only. Prerequisites: PSYC 497; cumulative GPA of 3.25 or higher and permission of the Honors Programs Chair. This course provides an opportunity for students to work with the Career Management Center in their placement in the semester prior to enrollment. A maximum of 6 credits of PSYC 368 and/or 369 can be counted towards the major in Psychology. (Qualifies as a CAP experience)

489, 490. Readings in Psychology. 3 hours; 3 credits. Prerequisite: approval by supervisory faculty member and departmental Honors Program committee. An individualized course in which the student does library research and writes a paper.

495/595. Topics in Psychology. 1-3 credits each semester. Prerequisite: PSYC 201S or permission of the instructor. The department offers selected topics that may not be offered regularly. These special topics will appear in the Schedule of Classes booklet each semester.

497. 498. Supervised Research. For ODU psychology majors only. Prerequisite: PSYC 317 (completed), PSYC 318W (completed or concurrent), pre-approved by psychology faculty supervisor and permission of the departmental Honors Program chair. Students conduct the supervised honors research and documents it in a thesis (in PSYC 498) for approval by the Honors Program committee. Students also participate in a required seminar and discuss the research. See section on Honors Program in Psychology.

728. 729. Research in Psychology. 3 hours; 3 credits. Prerequisite: approval by supervisory faculty member and departmental Honors Program committee. A wide variety of psychological research and writes a paper.

734/834. Proseminar in Applied Experimental Psychology. Seminar 3 hours; 3 credits. Prerequisites: admission to the psychology M.S. or Ph.D. program or permission of the instructor. The course offers students who wish to pursue topics not covered by regularly scheduled courses an opportunity to design, with input from the psychology program director. This course provides opportunities for advanced investigations of selected topics in psychology. May be taken by students beyond the first year of graduate study who wish to pursue topics not covered by regularly scheduled courses. Prerequisite: admission to the Psychology M.S. or Ph.D. program. 3 credits. Individual project under guidance of a research advisor. Required for students choosing thesis option. Limited to a total of 3 hours of credit.

735. Thesis. 3 credits. Prerequisite: PSYC 498. Individual project under guidance of a research advisor. Required for students choosing thesis option. Limited to total of 3 hours of credit.

712/812. History and Systems of Psychology. Lecture and discussion 3 hours; 3 credits. A survey of the historical roots of modern psychology.

713/813. Research Project I. Lecture 1 hour; 1 credit. Students engage in a research project completing the background literature review and methods sections for the project. A formal, oral presentation of the research project is required.

714/814. Research Project II. Lecture 2 hours; 2 credits. Students collect data, conduct data analyses and complete the results and discussion sections of a research report. A formal, oral presentation of the research project and its results is required.

718. Quantitative III. Lecture and discussion 3 hours; 3 credits. Prerequisites: graduate standing and PSYC 728/828 or equivalent. An advanced course in quantitative aspects of experimental design with an emphasis on multivariate statistics.

725/825. Quantitative IV. Lecture 3 hours; 3 credits. Prerequisite: PSYC 745 or equivalent. This course covers the topics of linear structural equation modeling and focuses on estimation, measurement models, confirmatory and exploratory factor analysis, structural equation modeling, longitudinal models, multivariate analyses, and mean structures.

727/827. Statistics and Research Methods I. Lecture 3 hours; 3 credits. Prerequisite: admission into the psychology M.S. or Ph.D. program or permission of the instructor. Review of introductory statistics and design, with review of a basic descriptive statistical procedures and an advanced examination of probability and inferential statistics. Explores multivariate statistics, emphasizing analysis of variance, to highlight the assumptions and applications of the general linear model to behavioral science data. Materials are covered in the context of classical experimental and quasi-experimental design.

728/828. Statistics and Research Methods II. Lecture 3 hours; 3 credits. Prerequisite: admission into the psychology M.S. or Ph.D. program or permission of the instructor. Provides advanced coverage of behavioral science data analysis in the framework of the general linear model, emphasizing applied multivariate analysis techniques (e.g., multiple regression, multivariate analysis of variance, logistic regression) and provides a brief overview of advanced analytic methods, including multilevel regression, structural equations modeling, and psychology. Advanced issues in research methods are discussed.

730/830. Teaching Statistics and Research Practicum. 1 or 3 credits. Prerequisite: PSYC 827 or PSYC 728 or 825 or 828. Advanced graduate students in Psychology will have the opportunity to direct statistics and research methods labs for graduate statistics courses. Students’ main role will be acting as peer mentors for the new graduate students. Other possible responsibilities may include grading, creating lab activities and assignments, and supervising students’ research projects. Students will be evaluated on their teaching effectiveness and performance.

731/831. Human Cognition. Lecture and discussion 3 hours; 3 credits. Prerequisite: admission into the psychology M.S. or Ph.D. program or permission of the instructor. An investigation of the ways in which people process and retain information, make decisions, and solve problems. Current models of perception, attention, memory, and cognition are discussed with particular emphasis on neurocognitive evidence of the brain mechanisms involved in cognition.

733/833. Grant and Manuscript Writing. Lecture 3 hours; 3 credits. Prerequisite: admission to the doctoral program in psychology. The course covers the structure, development, and growth of a written and oral presentation, the evaluation of publications and the critical components of grant applications. By the end of this course, each student will have prepared a manuscript that is ready for submission 3 months after the course has completed sections of a federal grant application.

734/834. Proseminar in Applied Experimental Psychology. Lecture and discussion 3 hours; 3 credits. Prerequisite: admission into the graduate program in
psychology or permission of the instructor. This course introduces students to the breadth of problem areas to which applied experimental psychology is applicable. Research methods and ethics employed by AE psychologists are discussed. Examples of AE research are reviewed, and students have opportunities to apply techniques to actual or simulated problems.

735/835. Health Psychology. Lecture 3 hours; 3 credits. The contemporary theories and research topics in health psychology. The course examines psychological and behavioral issues affecting health maintenance, coping, stress, and the treatment of chronic diseases, and health promotion. The course uses the biopsychosocial (mind-body) model as an organizing framework. It discusses the dynamic interactions among biological, social, personal, and behavioral factors joint in influencing people’s health. The course is conducted as a seminar.

741/841. Sensation and Perception. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 728/828 or equivalent. This course surveys classical and modern test theory, correlational methods, meta-analysis, reliability and validity theory, test development, and change measurement.

749/849. Advanced Social Psychology. Lecture and discussion 3 hours; 3 credits. This course discusses the behavior of the human as a member of a group. Topics include attitude theory and change, interpersonal attraction, group dynamics, and related theory and applied research techniques.

750/850. Organizational Psychology. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 728/828 or equivalent. This course provides an introduction to psychological theory, test development, and change measurement. A number of approaches to a variety of clinical problems are considered. Applications for the treatment of individuals (adults and children), couples and families are discussed.

763/863. Research Methods and Human Factors Psychology. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 727/827 or equivalent. This course provides an introduction to experimental design and statistical analysis, design of experiments, analysis of variance, data management, data analysis, and probability theory. The course examines design and analysis of surveys, quasi-experiments, questionnaires, and interviews and other methods for studying experimental processes.

859. Cognitive-Behavioral Therapies. Lecture 3 hours; 3 credits. Covers theory and techniques of cognitive and behavior therapy and assessment. Applications for the treatment of psychological and behavioral problems are considered. A variety of approaches to the treatment of psychological and behavioral problems is considered. Topics include techniques of therapy, case conceptualization, and assessment.

868. Advanced Personality Psychology II. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 728/828 or permission of the instructor. This course covers the topics of job analysis, psychological assessment, criterion development, selection, personnel management, validation, legal issues, and human resource planning.

876. Human Factors and Engineering. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 728/828 or permission of the instructor. This course covers the topics of human factors and engineering. A variety of approaches to the treatment of psychological and behavioral problems is considered. Topics include techniques of therapy, case conceptualization, and assessment.

771/871. Ergonomics. Lecture 3 hours; 3 credits. Basic overview and application of anthropometry, biomechanics, functional anatomy, mechanics, and human physiology for the design of industrial tools, equipment, and workstations.

795/895. Topics in Psychology I. 1-4 credits.

796/896. Topics in Psychology II. 1-4 credits.

810. Seminar in Professional Aspects of Industrial/Organizational Psychology. Lecture 3 hours; 3 credits. Prerequisite: admission into the I/O Ph.D. program. Topics covered include professional and ethical issues in industrial and organizational psychology, human resource management, professional associations, and professional opportunities for I/O psychologists.

815. Experimental Design. Lecture and discussion 1 hour; 1 credit. The teaching of psychology.

824. ODU Research Methods I: Statistics and Research Design. Lecture 3 hours; 3 credits. Prerequisite: admission into Virginia Consortium PSYD program or permission of the instructor. Reviews quantitative aspects of experimental design and data analysis, with emphasis on multivariate statistical procedures and an advanced examination of probability and inferential statistics. Explores univariate statistical techniques, including analysis of variance and covariance, and explores the assumptions underlying these statistical analyses. Explores the assumptions underlying these statistical analyses. Explores the assumptions underlying these statistical analyses.

825. ODU Research Methods II: Statistics and Research Design. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 750/850 or permission of the instructor. This course provides an introduction to experimental design and statistical analysis, design of experiments, analysis of variance, data management, data analysis, and probability theory. The course examines design and analysis of surveys, quasi-experiments, questionnaires, and interviews and other methods for studying experimental processes.

853. Macro Organizational Psychology. Lecture and discussion 3 hours; 3 credits. Study of classical and modern organizational psychology, the tools, techniques and procedures for the assessment and effective design of computer hardware, software and displays in contemporary human-computer interactions. Advanced issues in research methods are discussed.

861. Micro Organizational Psychology. Lecture and discussion 3 hours; 3 credits. Prerequisite: PSYC 750/850 or permission of the instructor. The study of individual and group behavior in organizations. Emphasis is placed on leadership, decision making, and job satisfaction.

854. Organizational Development and Change. Lecture and discussion 3 hours; 3 credits. Prerequisites: PSYC 851 and 853 or permission of the instructor. Study of theory and empirical research related to the organizational change processes used to foster organizational development and effective change.

855. Field Research Methods in Organizational Psychology. Lecture, discussion, and field research project; 3 credits. Prerequisite: admission into ODU/Ph.D. program or permission of the instructor. Study of the design and analysis of surveys, quasi-experiments, questionnaires, interviews and other methods for studying experimental processes.

858. ODU Clinical and Ethical Issues. Lecture 1 hour; 1 credit. Weekly seminars address professional and ethical issues in the practice of psychology.

875/875. ODU Research Methods I: Statistics and Research Design. Lecture 3 hours; 3 credits. Prerequisite: PSYC 728/828 or permission of the instructor. This course provides an introduction to experimental design and statistical analysis, design of experiments, analysis of variance, data management, data analysis, and probability theory. The course examines design and analysis of surveys, quasi-experiments, questionnaires, and interviews and other methods for studying experimental processes.

886. ODU Advanced Practicum in Clinical Psychology. 3-6 credits each semester for 3 semesters. 4 credits each semester for 3 semesters. Prerequisite: Permission of the clinical director. Must be enrolled in psychology doctorate program.

894. ODU Clinical Dissertation. 3-6 credits each semester for variable credit.

Public Administration — PADM

Associate Professor W. Leavitt (Chair of the Department of Urban Studies and Public Administration), Professors B. Menges, S. E. Noelle, R.S. Richman, and L.J. Puchelman. Associate Professor J.C. Morris. Assistant Professors P. A. Gibson and J. R. Lombard.

660. The Legal and Public Policy Environment of Business. Lecture 3 hours; 3 credits. An introduction to contemporary American government, and a survey of organization theory and behavior, policy analysis, and administrative practice in business. Special emphasis is placed on the public service sector, legal issues, regulatory practices and intergovernmental arrangements.

651. Introduction to Public Administration. Lecture 3 hours; 3 credits. Overview of the field of public administration including historical development, role of administration in contemporary American government, and a survey of organization theory and behavior, policy analysis, and administrative practice in business. Special emphasis is placed on the public service sector, legal issues, regulatory practices and intergovernmental arrangements.

652. The Environment of Public Administration. Lecture 3 hours; 3 credits. Analysis of environmental factors influencing decision making in public bureaucracies. Special emphasis is placed on the public service sector, legal issues, regulatory practices and intergovernmental arrangements.

666. Advanced Personnel Psychology II. 3 credits. Prerequisite: admission into the I/O Ph.D. program. Topics covered include professional and ethical issues in industrial and organizational psychology, human resource management, professional associations, and professional opportunities for I/O psychologists.

671. Public Budgeting Systems. Lecture 3 hours; 3 credits. An introduction to the legal environment of budgetary management in government, policy and program process, topical issues in the legal environment, labor relations, employment discrimination law and environmental law.

684. Internship/Field Experience. 3 or 6 credits. Required of all students without previous experience in government service. Supervised work experience in a public agency. A written report will be required.


695. Advanced Topics. Lecture and discussion 1-3 credits. Topics vary each semester.

696. Directed Readings. 1-4 credits. Specifically planned readings for the graduate student who wishes to pursue special interests outside the scope of formal studies within the program.

698. Directed Research. 3-6 credits. Supervised research on a specific program. A written report will be required.
699. Thesis, 6 credits. An approved research project, written under the supervision of a faculty committee, in which the student will work on a suitable and complete independent investigation. The completed project must be approved by the thesis committee.

701. Public Policy Analysis. Lecture and discussion 3 hours; 3 credits. An overview of the major approaches to problem solving in public and non-profit organizations. Experimental, quasi-experimental and non-experimental procedures will be covered.

702/802. Urban Services Administration. Lecture and discussion 3 hours; 3 credits. Analysis of the range of administrative tools and strategies for the delivery of urban services. Emphasis on new administrative alternatives under conditions of urban change.

720/820. Public Personnel Administration. Lecture 3 hours; 3 credits. Examines the basic framework of the public personnel system with the laws and regulations imposed by federal and state laws and regulations. General considerations of policy and procedures development, the organization of the public personnel system, the administration of the personnel operation, the determination of various levels of employee status and the coverage of the personnel system are included.

723/823. Ethics in Public Administration. Lecture 3 hours; 3 credits. Prerequisite: PADM 651. This course reviews the policies, procedures, and practices of the public sector, identifying public values and how they apply in the administration of public policy. It reviews sources of values employed in public sector decision-making, and reviews how values in public administration are managed and applied. Systems of public values are reviewed in the context of public professions. Case studies and best practices are examined to help the student understand the application of administrative ethics in public management.

725/825. Business, Government, and Society. Lecture 3 hours; 3 credits. Prerequisite: six completed hours of graduate work in an MBA or MPA program. An overview of business-government-society interactions, with special attention to the influence of public policy and corporate strategy on corporate social responsibility. An important theme is the ethical component of management decision making.

730/830. Theories of Conflict Resolution and Problem Solving. Lecture 3 hours; 3 credits. An introduction to the field of alternative dispute resolution methods and problem solving. The first part of the course focuses on conflict theory at all levels of human social systems and the second part examines collaborative problem solving strategies.

733/833. Legal Foundations of Public Administration. Lecture 3 hours; 3 credits. Focus on the processes of law and law application by the executive departments of government and agencies, labor relations, regulatory agencies, and their control by legislature and court. Examination of the political origins and constitutional status of administrative agencies and administrative discretion.

734/834. Negotiation and Dispute Resolution. Lecture 3 hours; 3 credits. Prerequisite: PADM 730/830. The course provides a broad understanding of negotiation skills and topics. It examines the underlying cultural, legal, and organizational issues and problems that impact on managing human resources in the public sector.

737/837. Digital Government. Lecture 3 hours; 3 credits. This course provides public administrators knowledge of current technology issues in the public sector and familiarizes them with technological tools used in delivering public services. The course explores administration, accountability and delivery of digital government, and problems in managing technology in the public sector. Issues concerning citizen privacy, freedom of information, e-governance, labor relations, cooperation and sharing information among public sector agencies and the private sector, and building community networks are reviewed.

738/838. Conflict Mediation and Arbitration. Lecture 3 hours; 3 credits. Prerequisite: PADM 730/830. Surveys the field of third party mediation and arbitration. The course describes practical skills in mediation and arbitration. It examines the nature and effectiveness of mediation in a wide variety of dispute situations, community, family, environmental, and international conflicts.

745/845. Managing Development and Change in Public Organizations. Lecture/case studies/activities; 3 credits. Examination of the theory and practice of organization development. Participants will take the role of change agent and work in applying various tools of organization development to public agency situations while giving attention to the particular cultural, political, legal and organizational characteristics of these organizations.

746. Capstone Seminar in Public Administration. Lecture 3 hours; 3 credits. Prerequisite: completion of 30 hours in the MPA program or permission of instructor. Examines the processes, organization and management of public administration in the context of theory and practice presented in the MPA core.

753/853. Research Methods in Public Administration. Lecture and laboratory 3 hours; 3 credits. Prerequisite: PADM 730/830. Examination of various methodologies for designing and conducting research. Emphasis is on selecting appropriate methods, analysis of basic statistical methods through multivariate analysis with practical application to data collection, analysis and interpretation in the context of decision making in public administration. Includes usage of computer statistical packages such as SAS or SPSS.

754/854. Advanced Public Program Evaluation. Lecture 3 hours; 3 credits. Analysis of the range of management tools and strategies for the delivery of public services. Examines new administrative alternatives under conditions of change.

757/857. Advanced Public Research and Decision-Making Methods. Lecture 3 hours; 3 credits. Prerequisite: PADM 730/853. Emphasis on application of advanced research design principles and statistical analysis techniques to public administration problems. Public research topics. Examines the use of quantitative techniques and microcomputer applications of those techniques to public decision-making.

781/881. Intergovernmental Management. Lecture 3 hours; 3 credits. Analysis of relationships among federal, state, and local government units in the delivery of governmental programs. Focus on intergovernmental issues in urban metropolitan regions.

795/895. Advanced Topics in Public Personnel Administration. Lecture 3 credits. An examination of selected topics including job analysis, position classification, test construction, performance appraisal, and affirmative action in public personnel management. Includes a focus in today application of these topics through in-class exercises and short papers. Permission of advisor is required.

Recreation and Tourism Studies
See Exercise Science, Sport, Physical Education and Recreation

Religious Studies — See Philosophy and Religious Studies

Sciences - SCI

101. Introduction to Sciences. Lecture 1 hour. Presents the relationship between majors in the College of Sciences and the student’s career goals for students planning to major in a science. Provides an orientation to the University emphasizing the learning skills needed for science majors.

302K. The Evolution of Modern Science. Lecture 3 hours; 3 credits. This course outlines the history of science from Aristotle to the present. Scientific progress has always been shaped by cultural and political factors and is subject to the political and culture of the times. Scientists, in most instances, have been in the mainstream of society. But, because of their research, scientists have often clashed with the prevailing culture.

693. Writing for the Sciences. Lecture 1 hour; 1 credit. Topics include: scientific writing, literature review, and research design. Emphasis is on writing and research, preparing a talk, writer’s tools, computer aids for writing and research, and when English is a second language.

Sociology — SOC


The Department of Sociology and Criminal Justice offers courses in sociology, anthropology, criminal justice, and social work. An introduction to the field of criminology is included.

201S. Introduction to Sociology. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S or permission of the instructor. An introduction to the nature and implications of nuclear weapons. Focus on sociological analysis of the major social problems confronting groups and individuals in a society marked by rapid change. Emphasis is given to the study of social phenomena including both historical and comparative perspectives.

293. Introduction to Marriage and the Family. Lecture 3 hours; 3 credits. An examination of the roles of marriage and the family. The course explores the family as a social institution and to social change, and of the religious behavior of individuals.

300. Population and Society. Lecture 3 hours; 3 credits. Prerequisite: six semester hours in the social sciences or permission of the instructor. This course offers an introduction to the field of population studies and the social changes that are leading to broader societal changes. It introduces students to the concepts, issues and concerns in population studies and examines the interaction between population processes and economic development, social changes and environment. Topics include theories, fertility, mortality, migration, distribution and composition, population development, population and environment, and policy. Emphasis is given to a critical assessment of population processes as both causes and consequences of development and societal changes with a focus on comparative patterns between developing countries and the more developed countries.

316. Juvenile Delinquency. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or SOC 215S. An analysis of social disorganization and social class. Emphasis is placed upon modern American society, with some comparison with historical and contemporary systems of other societies. Topics include: stratification, social mobility, social class.

321. Social Welfare. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or SOC 215S. An introduction to the broad field of social welfare. The philosophy, values, purposes, goals, and functions of social welfare services are examined. The course focuses on issues of social welfare and places these issues in a sociological framework, e.g., stratification, poverty and gender.

329. Social Welfare. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or SOC 215S. An introduction to the broad field of social welfare. The philosophy, values, purposes, goals, and functions of social welfare services are examined. The course focuses on issues of social welfare and places these issues in a sociological framework, e.g., stratification, poverty and gender.

330. Society and the Individual. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or permission of the instructor. An introduction to the field of social psychology and the social psychology of minority families’ lives in relationship to other societal institutions and historical developments. The course focuses on issues of minority families and places these issues in a sociological framework, e.g., stratification, poverty and gender.

340. Sociology of Women. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or six credits in social sciences or permission of the instructor. An exploration of the role and position of women in the family, society, and economy from a sociological perspective.

421. Feminist Research Methods. Lecture 3 hours; 3 credits. Prerequisites: WMST 215 and an introductory sociological research methods course or permission of the instructor. An overview of the research disciplines and techniques of mainstream social science research methods and to feminist approaches to social science research as applied to current issues in social science.

423. Sociology of Sexuality. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S. An overview of the scientific evidence of social phenomena. Includes the application of descriptive measures, graphic techniques, survey and experimental analysis to the study of these phenomena and techniques for making judgments and decisions.

430. Sociology of Women. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S or six credits in social sciences or permission of the instructor. An exploration of the role and position of women in the family, society, and economy from a sociological perspective.

421. Feminist Research Methods. Lecture 3 hours; 3 credits. Prerequisites: WMST 215 and an introductory sociological research methods course or permission of the instructor. An overview of the research disciplines and techniques of mainstream social science research methods and to feminist approaches to social science research as applied to current issues in social science.

423. Sociology of Sexuality. Lecture 3 hours; 3 credits. Prerequisite: SOC 215S. An overview of the scientific evidence of social phenomena. Includes the application of descriptive measures, graphic techniques, survey and experimental analysis to the study of these phenomena and techniques for making judgments and decisions.
and psychological dimensions of the nuclear threat.

353. Sociology of the Middle East. Lecture 3 hours; 3 credits. Sociology of the Middle East, its culture, religions, and political institutions. Prerequisites: SOC 101S or permission of the instructor.

367. Cooperative Education. 1-3 credits (may be repeated for credit). Prerequisite: approval of the department and Career Management. Students work part-time to gain credit for Cooperative Education programs. Available in Business Administration, Biology, Chemistry, Communication, Computer Science, Environmental Studies, Fine Arts, Kinesiology, Language and Literature, Mathematics, Music, Natural Sciences, Political Science, Psychology, Public Health, Social Work, Sociology, Speech Communication, Theatre and Dance, Veterinary Medicine, and Visual Arts. Credit is granted for three or six hours per course. Internships for less than 3 credits require prior approval by the Internship Faculty Director. (qualifies as a CAP experience)

369. Practicum. 3-6 credits. Prerequisite: permission of the department. This course allows students to participate in the Career Advantage Program (CAP). (qualifies as a CAP experience)

395, 396. Topics in Sociology. 3 credits each semester. Prerequisite: SOC 201S or permission of the instructor. A study of selected topics designed for non-majors, or for elective credit. Prerequisites: 60 hours of core courses. Prerequisite: 60 hours of core courses. The instructor will be the same person.

402/502. Child Welfare. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S or permission of the instructor. A study of the historical and social aspects of child care. Among the topics discussed: the history of child welfare, foster homes, illegitimacy, adoptions, and institutional care.

403W. Violence in the World of Children. Lecture 3 hours; 3 credits. Prerequisite: 6 hours in the social science perspective or SOC 215S or permission of the instructor. This course covers the effects of violence on children in the world, children's experiences of violence and its meaning in the lives of children, childhood violence toward children in cultures, families, schools; child physical, emotional, and neglect. Prerequisites: 6 hours in the social science perspective or permission of the instructor.

450/550. Social Change and Social Movements. Lecture and discussion 3 hours; 3 credits. Prerequisite: SOC 201S or permission of the instructor. Analysis of the nature and causes of social change, major social movements, and their impact upon contemporary society.

409. Sociological Theory. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S. The development of sociological thought and the importance of sociological theory. Analysis of major contributions to the development of sociological thought.

415. Sociology of Work and Occupations. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S. The sociology of work and occupations, the study of the social processes involved in the production, distribution, and consumption of goods and services within the economy. Includes the study of occupations and the nature of work.

421/521. Deviant Behavior. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S or CRJS 215S or permission of the instructor. The study of the process of and responses to the oppression of racial, religious, ethnic, and national minorities and the impact of such behaviors within a historical and comparative perspective. Special emphasis given to American minorities and especially African Americans.

426/526. The Sociology of Minority Groups. Lecture 3 hours; 3 credits. Prerequisite: SOC 201S or permission of the instructor. The study of the process of and responses to the oppression of racial, religious, ethnic, and national minorities and the impact of such behaviors within a historical and comparative perspective. Special emphasis given to American minorities and especially African Americans.

430. Applied Social Statistics. Lecture 3 hours; 3 credits. Prerequisite: SOC 610. This course is a graduate-level introduction to social statistics as they may be applied to various social problems. Students will learn the appropriate use of various statistical procedures through discussion and application. (cross-listed with CRJS 630)

440. Sociological Application of Computer and Data Analysis. Lecture and lab 3 hours; 3 credits. Prerequisite: SOC 630. This course is a graduate-level introduction to the use of the computer in problems of data management and analysis. Students will learn how to use statistical packages (SPSS, SAS) to build specified data files and carry out various statistical procedures. (cross-listed with CRJS 640)

444. Current Feminist Research in Sociology. Lecture 3 hours; 3 credits. This course will focus on feminist analysis of the way women and gender traditionally have been studied in mainstream sociology. A minimum of one-third of the course is devoted to the presentation and discussion of a specially selected paper. Students practice these skills assignments in class and by completing their thesis proposal. (cross-listed with CRJS 644)

650. Research Seminar. 3 credits. This seminar integrates the skills needed to complete a master's thesis. Exercises include formulating research questions, developing a research design, and writing a publishable paper. Students practice these skills assignments in class and by completing their thesis proposal. (cross-listed with CRJS 644)

660. Sociology Seminar. Lecture 3 hours; 3 credits. Prerequisites: SOC 610, 620, 630, 640, 660, 700, 600, 696. An examination of contemporary research and policy issues in the study of sociology. The course also provides an overview for specific concentrations in criminal justice and women's studies.

669. Internship. 3 credits. Prerequisite: permission of the instructor. Students gain first-hand experience in professional settings. The work experience is to be selected given students' research agendas and their academic background and career objectives. Students will be required to complete a research project which corresponds to their specific internship placement.

695/696. Topics of Sociology. Lecture 3 hours; 3 credits. Topics will vary each semester.

697/698. Independent Study in Special Topics in Sociology. 3 credits. Prerequisite: approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

699. Thesis. 3-9 credits. 740/840. Demographic Techniques. Lecture 3 hours; 3 credits. Basic methods of demographic analysis. Topics include population estimation and projection and the measurement of fertility, mortality, and migration.

795/895. Topics. 3-6 credits. Prerequisite: permission of the instructor. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

797/897. Independent Study in Sociology. 3 credits. Prerequisites: approval of department chair and 6 hours of graduate credit. Independent reading and study on a topic to be selected under the direction of an instructor.

Statistics — See Mathematics and Statistics

Taxation — See Accounting and Taxation

Theatre and Dance

Associate Professors E.M. Hendrix, M.F. Marlott (Dance Director), K.G. Winters, and C. Hanna (Theatre Director), Assistant Professor A. Kinzer.

I. Dance Courses—ABC

185A. Dance and Its Audience. Lecture and discussion 3 hours. Prerequisite: Permission of the instructor. Analysis of the components of theatrical dance performance, its historical and ethnic origins, its role as a creative expression of people's lives, and different art forms of dance. Through films, videos, live performances, guest speakers, readings and discussions, students consider philosophical approaches to language, communication, aesthetics and style of choreography.

195. 196. Topics in Dance. 1-3 credits each semester. A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

201. Ballet Technique 1. Studio 4 hours; 2 credits. Introduction to classical ballet technique.

211. Modern Dance Technique 1. Studio 4 hours; 2 credits. Introduction to modern dance technique.

231. Ballroom Dance 1. Laboratory 2 hours; 1 credit. This class will introduce students to basic American and Latin ballroom dance. Basic steps of the tango, waltz, swing, tango, cha cha and rumba will be covered. Focus on rhythm, technique, leading and following. Class will be open to all undergraduate students. Class is open to single students and couples.

232. Ballroom Dance 2. Laboratory 2 hours; 1 credit. This is a continuation of basic American and Latin ballroom dance. Basic steps of the tango, waltz, swing, tango, cha cha and rumba will be covered. Focus will be on rhythm, technique, leading and following. Class is open to single students and couples.

233. Ballroom Dance 3. Laboratory 2 hours; 1 credit. Prerequisite: Permission of the instructor. This class is a continuation of American and Latin ballroom dance 2. Basic steps of the tango, waltz, swing, tango, cha cha and rumba will be covered. Focus will be on...
rhythm, technique, leading and following. This class is open to single students and couples.

239. Ballroom Dance 4. Laboratory 2 hours; 1 credit. Prerequisite: DANC 231, 232 or permission of the instructor. This class is a continuation of the Ballroom Dance sequence. Students will learn the techniques of waltz, foxtrot, tango, cha cha and rumba will be covered. Focus will be on rhythm, technique and leading and following. This class is open to single students and couples.

235. Yoga 1. Laboratory 4 hours; 2 credits. Introduction to Hatha Yoga as a tool for reducing stress and increasing flexibility. Students will learn the basic understanding of the practice of Hatha Yoga in its complete form including yoga postures, breathing exercises and meditation. Focus will be on mental health, centering and breath to enhance quality of life.

236. Yoga 2. Laboratory 4 hours; 2 credits. Prerequisite: DANC 235. Introduction to Hatha Yoga as a tool for reducing stress and increasing flexibility. Students will acquire a basic understanding of the practice of Hatha Yoga in its complete form including yoga postures, breathing exercises and meditation. Focus will be on physical fitness, health, centering and breath to enhance quality of life.

241. Pilates® Mat Class I. Laboratory 2 hours; 1 credit. The Pilates® method of body conditioning is an exercise system focused on improving flexibility and strength for the total body without building bulk. It is a series of controlled movements engaging the body and mind supervised by an extensively trained teacher. It promotes physical harmony and balance while providing a refreshing and energizing workout. Currently the Pilates method is used internationally by every level of fitness as well as by dance companies, sports teams, fitness enthusiasts and physical therapists.

242. Pilates® Mat Class II. Laboratory 2 hours; 1 credit. Prerequisite: DANC 241 or permission of the instructor. The Pilates® method of body conditioning is an exercise system focused on improving flexibility and strength for the total body without building bulk. It is a series of controlled movements engaging the body and mind supervised by an extensively trained teacher. It promotes physical harmony and balance while providing a refreshing and energizing workout. Currently the Pilates® Method is used internationally by every level of fitness as well as by dance companies, sports teams, fitness enthusiasts and physical therapists. This course will continue the concepts introduced in Pilates® Mat Class I.

251. Tap Dance I. Laboratory 2.5 hours; 1 credit. Introduction to tap dance styles including classic, hoof and rhythm and complex steps such as steps, tap-off, riffs, etc. will be incorporated using counterpoint rhythms and challenges. Students will gain an understanding of tap dance as an American art form.

252. Tap Dance II. Laboratory 2.5 hours; 1 credit. Prerequisite: DANC 251 or permission of the instructor. Continuation of tap dance styles including classic, hoof and rhythm. Fundamental movements such as steps, tap-off, riffs, etc. will be incorporated and developed using counterpoint rhythms and challenges. Students will gain an understanding of tap dance as an American art form.

260. Introduction to Dance Technique. Laboratory 2.5 hours; 1 credit. Prerequisite: completion of the full series. Introduction to dance techniques for students interested in beginning their dance training in the spring semester. The class will focus on basic dance technique and will include both physically and mentally to enter Ballet I, Modern Dance 1 or Jazz Dance 1 in the fall semester.

295, 296-99. 3 credits each semester. A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be fully described in a booklet distributed to all academic advisors.

302. Ballet Technique 2. Studio 4 hours; 2 credits. Prerequisite: DANC 201 or permission of the instructor. Continuation of classical ballet technique.

303. Ballet Technique 3. Studio 2-8 hours; 1-4 credits. Prerequisite: DANC 201 or permission of the instructor. Continuation of ballet technique at an intermediate level.

310. Modern Dance Technique 2. Studio 4 hours; 2 credits. Prerequisite: DANC 211 or permission of the instructor. Continuation of modern dance technique.

311. Modern Dance Technique 3. Studio 2-8 hours; 1-4 credits. Prerequisite: DANC 211 or permission of the instructor. Continuation of modern dance technique at an intermediate level.

312. Jazz Dance 1. Studio 2.5 hours; 1 credit. Prerequisite: DANC 201 or 211 or permission of the instructor. Continuation of jazz dance technique.

327. Jazz Dance 2. Studio 2.5 hours; 1 credit. Prerequisite: DANC 201 or 211 or permission of the instructor. Continuation of jazz dance technique.

350. Dance Improvisation. Laboratory 2 hours; 1 credit. Prerequisite: DANC 201 or permission of the instructor. An exploration of movement invention through structured exercises, games and problems. Emphasis will be on the creative development of the individual dancer as a performer and choreographer.

360. Rhythmic Analysis. Lecture 1 hour; 1 credit. Prerequisite: permission of the instructor. A study of dance composition and analysis. The emphasis will be on the structural analysis of dance compositions and the underlying principles of dance structure.

361. Dance Composition 2. Lecture 1 hour; laboratory 2 hours; 2 credits. Prerequisite: DANC 370 and permission of the instructor.

364. Advanced Repertory and Performance. 1 credit. Prerequisite: DANC 386 or permission of the instructor. Additional fees may be charged. (qualifies as a CAP experience)

489. Principles of Teaching Dance. 2 credits. Prerequisite: permission of the instructor. This course will cover basic methods of movement education as applied to the teaching of ballet, modern dance, jazz, and movement for children. An understanding of anatomical structure and mechanics will be utilized in the analysis of student performance. Emphasis in dance classes or dance exercises will be explored. Practical experiences in the planning, organization and structure of technique classes of various styles are designed to prepare students as dance educators. (qualifies as a CAP experience) 495/595, 496/596. Topics in Dance, 1-3 credits each semester. Prerequisites: senior standing and approval of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work in small seminars of interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

497/597, 498/598. Tutorial Work in Special Topics in Dance, 1-3 credits each semester. Prerequisites: senior standing and approval of the department chair. Independent research and study on a topic to be selected under the direction of a member of the department faculty, and approval of the department chair.

499. Senior Project. 1 credit. Prerequisite: senior standing as dance major and approval of the department chair. Completion of paper during a student’s senior year related to a career project in the student’s interest area. Topics to be selected under the direction of an instructor with conferences as appropriate. (qualifies as a CAP experience) 697/698. Tutorial Work in Special Topics in Dance, 1-3 credits. Prerequisite: graduate standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of a member of the department faculty, and approval of the department chair.

4. Theatre Arts Activity Courses—THEA (Designated for Activity Credit)

173. Theatre Activities. 1 credit. Participation in University theatre arts as assigned by the instructor. May be repeated to a maximum of 18 credits. Prerequisite: DANC 189 or permission of the department head.

189. The Creative Self. Lecture 2 hours; laboratory 2 hours; 3 credits. Develops and explores creative potential through dance, mime, and acting. Emphasis will be given to the development of individual imagination.

248. Introduction to Stage Makeup. Lecture 2 hours; 1 credit. A workshop which introduces basic principles, methods, and materials used in stage lighting and the construction of costumes for the theatre. Emphasis will be directed to actually experiencing live theatre. Attendance at performances is required.

249. Introduction to Scenery and Lighting. Lecture 2 hours; laboratory 2 hours; 1 credit. A workshop training performers in techniques for creating believable and safe stage costumes. Techniques will involve hand-to-hand contact and team-oriented problem solving.

247. Introduction to Stage Costumes. Lecture 2 hours; laboratory 1 hour; 2 credits. Focuses on the history, design and construction of costumes for the theatre. Students will gain an understanding of historical styles and the creative processes in costume design.

248. Introduction to Stage Makeup. Lecture 2 hours; laboratory 2 hours; 2 credits. Develops skills and techniques for design and application of stage makeup.
A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course catalog more fully described in a booklet distributed to all academic advisors.

320. Auditioning Technique. Laboratory 2 hours; 1 credit. Prerequisite: THEA 242 or permission of the instructor. Study and practice in auditioning and permission of the instructor. Course will focus on the application of the principles of design for stage and screen, as well as the development of design aesthetics in a practical laboratory environment.

342. Acting II: Intermediate Acting for Stage and Camera. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: THEA 242 and permission of the instructor. Study of various acting techniques and their application to the creation of character in a variety of acting situations.

347. Movement for the Actor. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: THEA 242 and permission of the instructor. Study of the development of movement vocabulary, focusing on specific techniques for the development of character creation and the application of movement to the creation of character in a variety of acting situations.

350. The Spoken Text. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: THEA 242 or permission of the instructor. An introduction to the structure of the spoken text, focusing on the development of vocal technique, and the application of vocal technique to the creation of character in a variety of acting situations.

370. The Video Project. Lecture 2 hours; laboratory 2 hours; 3 credits. A studio course offering the student an opportunity to explore the world of documentary filmmaking. By using the camera as a research tool, and the research process as secondary support of a thesis the student is better able to understand the role of documentary filmmaking in the teaching of the discipline.

380. The Video Documentary I. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: THEA 242. This course is a studio course offering the student an opportunity to explore the world of documentary filmmaking. By using the camera as a research tool, and the research process as secondary support of a thesis the student is better able to understand the role that documentary filmmaking plays today. Students will develop projects leading toward the completion of a short documentary film or video. (cross-listed with COMM 380)

395, 396. Topics in Theatre. 1-3 credits each semester. Prerequisite: Permission of the instructor. A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course catalog more fully described in a booklet distributed to all academic advisors.

441/541. American Theatre. Lecture 3 hours; 3 credits. Prerequisite: THEA 241A, junior standing, or permission of the instructor. A historical perspective of American theatre, beginning in the 17th century and ending with contemporary American theatre. Considerable attention is directed toward scene study.

442. Principles of Directing. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: THEA 242 and 342. An examination of and practical application of principles of stage direction as influenced by play script, acting talent, set and lighting design, and the technical facilities of production organizations.

443/543. Acting III: Advanced Acting for Stage and Camera. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: THEA 241A or permission of the instructor. In-depth study of avant-garde theatre scripts and performance techniques from 1900 to the present.

446/545. Experimental Theatre. Lecture 2 hours; 3 credits. Prerequisite: THEA 241A or permission of the instructor. An in-depth study of avant-garde theatre scripts and performance techniques from 1900 to the present.

447/547. Women in Theatre. Lecture 3 hours; 3 credits. Prerequisites: THEA 241A or permission of the instructor. A study of the contributions women have made to the theatre as actresses, directors/managers, designers, and playwrights, and of their critical and creative contributions to the theatre.

449W/549. Script and Performance Analysis. Lecture 3 hours; 3 credits. Prerequisite: THEA 241A or permission of the instructor. An examination of the application of research techniques to the study of the play script, focusing on the analysis of the text, the script as an artifact, and the film adaptation of the text.

470W/570, Film as Communication. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An examination of film as communication and an institution. An examination of how films are made, how they communicate as a visual medium, and how they are evaluated. Emphasis on the interaction between social, aesthetic, economic, and technological factors. (cross-listed with COMM 470W/570)

471W/571. International Film History. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: THEA 242 and 360. Course will continue the study of vocal production, speech and eating. Focus will be on the development of the stage as an art form in its historical and cultural context. Representative classic and contemporary works will be screened and analyzed. (cross-listed with COMM 471W/571)

479/579. American Film History. Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An examination of American motion pictures as an art form, a business and an institution from its inception to the present. Emphasis is on the narrative fiction film, its technological and aesthetic development, and the economic and social-cultural context. Representative classic and contemporary works will be screened and analyzed. (cross-listed with COMM 479/579)

480/580. The Video Documentary II. Lecture 1 hour; laboratory 2 hours; 3 credits. Prerequisites: THEA 242 and 380. This is a production/studio course designed to complete the preparatory work developed in Theatre 380: The Video Documentary I, with the completion of a short documentary film. Students in this course, meeting on a regular, arranged basis, will report their progress on field research and production. Discussion/presentation topics range from production field work to post-production editing. The final film of the course will be compiled to report the rough footage in post production. (cross-listed with COMM 480/580)

490. Methods of Teaching Theatre. Lecture 3 hours; 3 credits. Corequisite: THEA 349. Prerequisite: junior standing. Focuses on conceptual foundations of theatre education including history, philosophy, and methodology and require of classroom instruction and theatrical rehearsals and performances.

490. Theatre Education Practicum. 1 credit. Corequisite: THEA 489. Prerequisite: junior standing. Designed to be taken concurrently with THEA 489, this course provides students with an opportunity to further develop their understanding of theoretical and practical aspects of teaching and participation in the classroom setting. Students will evaluate that practical experience in relation to theoretical issues presented in Theatre 489. (qualifies as a CAPP experience)

495/595, 496/596. Topics in Theatre. 1-3 credits each semester. Prerequisite: Permission of the instructor. A study of selected topics designed to permit small groups of qualified students to work with cooperating faculty members. A topic which, due to its specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

497/597, 498/598. Tutorial Work in Special Topics in Theatre. 1-3 credits each semester. Prerequisite: Graduate standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

499. Senior Project. 1 credit. Prerequisite: senior standing as theatre major and approval of department chair. Completion of a paper during a student's senior year related to a major project in the student's interest area. Topic to be selected under the direction of an instructor with conferences as appropriate.

697/698. Tutorial Work in Special Topics in Theatre. 1-3 credits. Prerequisite: graduate standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

Urban Services

Professor B. Bengtus (Chair) and S. A. Berry (Chair, Department of Urban Studies and Public Administration)

Urban Services program includes several disciplines (please see requirement degrees in Colleges, Schools and Department of Instruction Section). For course descriptions please refer to appropriate course catalog.
Women’s Studies — WMST

Associate Professors A.C. Fellman (Chair of the Department of Women’s Studies) and S. Moorti.

Undergraduate departmental courses cross-listed with Women’s Studies include, for example, Psychology of Women and Communication Between the Sexes, Women in American History, Sociology of Women, Women in the Visual Arts, Sociology of Sexuality, and Violence Against Women.

Courses open to both graduate and undergraduate students include Women Writers; Language, Gender and Power; and Hispanic Women Writers.

690. Introduction to Urban Studies. Lecture 3 hours; 3 credits. Prerequisite: permission from an advisor. Basic definitions and interdisciplinary perspectives on the urban process from the perspectives of history, economics, geography, sociology, political science and related disciplines. Some focus on the qualities of urban research activities.

696-697. Topics in Urban Studies. Lecture and discussion 3 hours; 3 credits. Topics may vary each semester.

698. Directed Research. 1-6 credits.

699. Thesis. 6 credits. An approved research project, written under the supervision of a faculty advisor, in which the student demonstrates the capacity to design and complete independent scholarly investigation. The completed project must be approved by the thesis committee.

701/801. Urban Policy Analysis. Lecture 3 hours; 3 credits. Analysis of increasingly complex problems of urban systems. Focus on problem identification, policy formulation, program implementation, and policy impacts.

702/802. Urban Resource Allocation. Lecture 3 hours; 3 credits. This course has three basic emphases: (a) theories of resource allocation; (b) analytical techniques useful in resource allocation analysis; and (c) methods of control for resource allocation. Includes techniques of cost effectiveness, budgeting, expenditure analysis as they relate to the urban environment.

703/803. Urban Program Design and Implementation. Lecture 3 hours; 3 credits. This course has two basic emphases: (a) an examination of methods of identifying and evaluating the design of urban programs, and (b) an examination of the organizational dynamics involved in developing new programs in an urban setting, gaining acceptance, and implementing and coping with unanticipated consequences.

704/804. Methods of Urban Program Evaluation. Lecture 3 hours; 3 credits. Prerequisite: PADM 753/853 or URBN 607. Examination of various methodologies for designing and conducting urban program evaluation and research. Emphasis on quasi-experimental and nonexperimental procedures will be covered.

705/805. Urban Law and Public Policy. Lecture 3 hours; 3 credits. Focuses on legal aspects of urban policy by analyzing primary legal materials, including court decisions and legislative and administrative regulations. Skills of legal interpretation and legal draftsmanship are developed.

711/811. Urban Services Administration. Lecture and discussion 3 hours; 3 credits. Analysis of the range of administrative tools and strategies for the delivery of urban services. Emphasizes new administrative alternatives under conditions of urban change.

724/824. Administration of Human Services. Lecture 3 hours; 3 credits. Analysis of human services involving direct client/agency interaction. Problems of discretion and control are examined as alternative service delivery strategies which can deal with these problems.

807. Urban Theory and Practice. Lecture 3 hours; 3 credits. Focuses on legal aspects of urban policy by analyzing primary legal materials, including court decisions and legislative and administrative regulations. Skills of legal interpretation and legal draftsmanship are developed.

808. Urban Theory and Practice. Lecture 3 hours; 3 credits. Focuses on legal aspects of urban policy by analyzing primary legal materials, including court decisions and legislative and administrative regulations. Skills of legal interpretation and legal draftsmanship are developed.

811. Dissertation Seminar. 3 credit hours. A multidisciplinary seminar that focuses on the design, implementation, and evaluation of urban programs under real-life conditions in the field. Students and faculty work with urban decision makers utilizing problem-solving skills and analysis.


899. Dissertation. 1 to 12 credits. An approved research project, written under the supervision of a faculty advisor, in which the student demonstrates the capacity of design and complete independent scholarly investigation. The completed project must be approved by the dissertation committee.

695, 696. Topics in Women’s Studies. 3 credits each semester. Prerequisite: junior standing or permission of the instructor. Advanced seminars on selected topics. The subject matter will usually be interdisciplinary. These seminars will be more fully described in the women’s studies brochure and in material distributed each semester to all graduate students.

697. Independent Study. 3 credits each semester. Prerequisite: graduate standing. Independent study of an interdisciplinary women’s studies topics to be selected under the direction of a women’s studies faculty member. Conferences and papers as appropriate.

797/897. Independent Study. 1-3 credits. Prerequisite: graduate standing; doctoral level only for 897. Independent study of an interdisciplinary women’s studies topics to be selected under the direction of a women’s studies faculty member. Conferences and papers as appropriate.

Seminar intended for women’s studies majors in the final semester(s) of study, consisting of an individualized or group senior project, such as a research paper, an oral history, an internship, or an action project.

495/595, 496/596. Topics in Women’s Studies. 3 credits each semester. Prerequisite: junior standing or permission of the instructor. Advanced seminars on selected topics. The subject matter will usually be interdisciplinary. These seminars will be more fully described in the women’s studies brochure and in material distributed each semester to all academic advisors.

497/597, 498/598. Independent Study. 1-6 credits. Prerequisite: at least one women’s studies course. Independent study of an interdisciplinary women’s studies topic, or a reading plus internship project to be selected under the direction of a women’s studies faculty member. Conferences and papers as appropriate. Tutorial work, either library-based or field work, must be approved by the instructor and the women’s studies director before a student may enroll in the course. No more than three credits of tutorial work may be counted within the basic requirements for the women’s studies minor or major.

668. Internship. 3-6 credits. Prerequisites: graduate standing and instructor approval required. Course provides an opportunity to gain experience working in organizations and government agencies. Students’ work should engage with women’s issues at the local, regional, national, and/or global levels. Students must work for at least 30 hours per course credit.

695, 696. Topics in Women’s Studies. 3 credits each semester. Prerequisite: graduate standing. Advanced seminars on selected topics. The subject matter will be interdisciplinary. These seminars will be described in the women’s studies brochure.

897. Independent Study. 3 credits each semester. Prerequisite: graduate standing. Independent study of an interdisciplinary women’s studies topics to be selected under the direction of a women’s studies faculty member. Conferences and papers as appropriate.

Women’s Studies Courses
## General Education Transfer Equivalents for Virginia Community College System Courses

**Old Dominion University Lower-Division General Education**

*Written Communication Skills (6 credits)*
- ENGL 110C
- and
- ENGL 111C
- ENGL 131C
- HIST 111C
- PHIL 111C

*Oral Communication Skills (3 credits)*
- COMM 101R
- COMM 103R
- COMM 112R

Requirement can also be met by approved course in the major.

*Mathematical Skills (3 credits)*
- MATH 101M
- MATH 102M
- MATH 162M
- MATH 162M and 163
- STAT 130M

*Foreign Language Skills (0-6 credits)*
- ARAB 111F
- CHIN 111F and elective
- FR 101F and 102F
- GER 101F and 102F
- HEBR 111F
- ITAL 101F and 102F
- JAPN 111F
- LATN 101F and 102F
- PRTG 111F
- RUS 101F and 102F
- SPAN 101F
- SPAN 102F

Foreign Language Skills I and II (FLP 1REQ and 2REQ)

*Computer Skills (0-3 credits)*
- CS 101D
- CS 149D
- OTS 251D

Computer Skills Perspective (CSP 1REQ)

Requirement can also be met by approved course in the major.

*Literature Perspective (3 credits)*
- ENGL 112L
- ENGL 144L
- Literature Perspective (LITP 1REQ)

*Fine and Performing Arts Perspective (3 credits)*
- ARTH 121A
- ARTS 122A

Fine and Performing Arts Perspective (FPAP 1REQ)

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**Virginia Community College System Courses**

*Written Communication Skills (6 credits)*
- ENG 111
- and
- ENG 112 or 210
- ENG 115 or 131

*Oral Communication Skills (3 credits)*
- SPD 100, 105, or 110
- SPD 111
- SPD 126

*Mathematical Skills (3 credits)*
- MTH 152 or 182
- MTH 155 or 160
- MTH 163 or 168
- MTH 166
- MTH 146, 157, 240, 241, 242, 243, or 244

*Foreign Language Skills (0-6 credits)*
- ARA 101
- CHI 101 and 102
- FRE 101 and 102
- GER 101 and 102
- none
- ITA 101 and 102
- JPN 101 and 102
- LAT 101 and 102
- RUS 101 and 102
- SPA 101 or 105 and 106
- SPA 102 or 107 and 108
- TAG 101 and 102
- VTN 101 and 102

*Computer Skills (0-3 credits)*
- ITE 115 or 215
- CSC 110 or 130, EGR 125, ITP 130, 132, 134, or 136
- none
- CSC 155 or 200, BUS 147, ITE 100, ITP 100

*Literature Perspective (3 credits)*
- none
- ENG 241, 242, or 246
- ENG 235, 237, 243, 244, 245, 251, 252, 267, or 268
- none

*Fine and Performing Arts Perspective (3 credits)*
- ART 101, 102, 111, or 112
- ART 113, 114, 133, or 135
- ART 105 or 106, or HUM 100, 201, 202, or 260
THEA 241A
MUSC 264A
DANC 185A

SPD 130, 141, or 142
MUS 121 or 122
none

Philosophy Perspective (3 credits)
PHIL 110P
PHIL 120P
PHIL 150P

PHI 100, 101, 102, or 200
none
REL 230, 231, or 232
PHI 211, 212, 220, or 265, or REL 250

Philosophy Perspective (PHIP 1REQ)

History Perspective (3 credits for Professional Degrees or 6 credits for Traditional Degrees)
HIST 101H
HIST 102H
HIST 103H
HIST 104H
HIST 105H

HIS 253 or 254
HIS 221 or 222
HIS 231 or 232

none
HIS 203
HIS 101, 102, 111, 112, 121, 122, 201, 202, 251, 252

History Perspective (HISP 1REQ and HISP 2REQ with sequence)

Social Science Perspective (3 or 6 credits)
ANTR 110S
COMM 200S
CRJS 215S

SOC 210, 211, or 212
none
ADJ 107, 201, or 202, or
SOC 236
ECO 120
ECO 201
ECO 202
GEO 210
GEO 200 or 205
PLS 241 or 242
PLS 130, 135, or 211
PSY 200, 201, or 202
PSY 231, 232, 235 or 238

PSY 203
SOC 201 or 202, SOC 255

Social Science Perspective (SSCP 1REQ)

Natural Science and Technology Perspective (11 or 12 credits)
BIOL 108N and 109N
BIOL 115N and 116N

none

Natural Science Perspective (NSCP 1REQ and 2REQ)

BIOL 161 and 162, NAS 111 and 112, SCT 111 and 112
BIOL 270 or GOL 225
PHY 130
CHM 101 or 121 or 102 or 122

CHEM 111 or 113 and 112 or 114
GOL 110
GOL 105 or 205, and 106
GOL 111 and 112, MAR 101 and 102
PHY 100, 101, 114, 121, or 131
PHY 102, 115, 122 or 132

NAS 130 or 131
NAS 132
PHY 111 or 201
PHY 112 or 202

PHY 221, 231, or 241
PHYS 222, 232, or 242

The Technology requirement may be satisfied by a major course.

The complete transfer course database is available on MONARCH TRANSFERMATION found at www.odu.edu/ugcont under For Students.
### Officers of the University

#### Board of Visitors

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<thead>
<tr>
<th>Term</th>
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<tbody>
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<td>Frank Batten, Jr.</td>
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<tr>
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#### Officers of the Administration

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